The **future** of **interactive** entertainment

UK edition **October** 1995 £3.50 ¥2100 $ten



Sony ■ Sega ■ Nintendo ■ 3DO ■ PC ■ Amiga ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i

High **flyers**

Launching a **career** in the games **industry**

Issue **twenty-five**

25

Voted **Magazine of the year**



Industry awards

The world of interactive entertainment is growing at an unprecendented rate. As more heavyweight players enter the arena, games development is finally getting the backing it deserves. But one thing is holding it back: a lack of people with the necessary skills. If you've ever wanted to get into the games industry, turn to page 54

Future Publishing

EDGE



Talent wanted…
Experience required

No more than three or four years ago, videogames were still produced on a small scale, and most of the people working on them were either self-taught or had acquired their skills on the job. But those days are over. The games industry has expanded rapidly in recent years, and in the process it has become more professional and more labour-intensive.

And this is its dilemma. Like any big industry, it needs a constant supply of fresh, talented people to sustain it. But as the employment opportunities have increased, the sources have remained limited.

A key problem is that there are no recognised college courses specialising in videogames-related fields. If the industry hopes to foster the innovation and creativity that any commercially driven artistic medium needs, it must support and finance the development of degree-level courses in games programming, design, graphics and related fields.

Unless these skills are nurtured, there will not be enough talented people to create the number of outstanding games necessary to fuel a mass market. To avoid suffering the boom-bust cycle that blights the industry, games design needs to become a recognised profession capable of sustained creativity – it was tired clones and shoddy sequels that sealed the fate of the 16bit console market.

Without investing in the future of young people eager to enter the industry, videogames are destined to remain in the shadow of their more established rivals in the entertainment sphere.

The **future** is almost here…

inside 





ABC: 31,522
(July–Dec 1994)
Printed in the UK

Contacts

Editorial

Future Publishing
30 Monmouth Street
Bath BA1 2BW

Telephone 01225 442244
Fax 01225 338236
E-mail edge@futurenet.co.uk

Subscriptions

Future Publishing Ltd
FREEPOST BS4900, Somerton
Somerset TA11 7BR
Tel Customer services:
01225 822510
Customer order line:
01225 822511
Fax 01458 274378

The annual subscription rate for one year is:
UK £36 (£32 direct debit), post free;
Europe £63; rest of world £92
Overseas distribution:
Future Publishing 1225 442244

People on Edge

Jason Brookes editor
Jez Bridgeman art editor
Ceri (bye, bye) Vines sub-editor
James Flynn writer
Terry (bye, bye) Stokes art assistant

Chris Buxton associate editor
Nicolas di Costanzo Tokyo bureau

Louise Woods advertising manager
(lwoods@futurenet.co.uk)
Graham Clarke business development
Dominique Fisher sales executive
Advertising fax 01225 480325
Lisa Smith production coordinator
Richard Gingell production manager
Production fax 01225 423118
Cathy McKinnon ad design
Claire Thomas production controller
Judith Green group prod. manager
Jon Moore pre-press services co-ordinator
Simon Windsor, Chris Stocker colour scanning and manipulation
Mark Gover, Jason Titley, Oliver Gibbs pre-press services
Colin Campbell publisher
Greg Ingham managing director
Nick Alexander chairman

Colour reproduction

Colourworks Repro, Bristol
Phoenix Repro, Bath

Print

Cradley Print, Warley, West Midlands
Edge is printed on Royal Press 90 gsm

Production of Edge

Hardware: Power Macintosh, PowerBook, IIsi and Classic by Apple
Software: *QuarkXPress*, Adobe *Photoshop*, Aldus *FreeHand*, Pixar *Typestry* and *Nisus*
Typography: (Adobe®)
ITC Franklin Gothic/**Heavy**
Bell Gothic Light/**Black**
Gill Sans/**Bold**
Fifth colour: Pantone® 8001/Blue

Cover

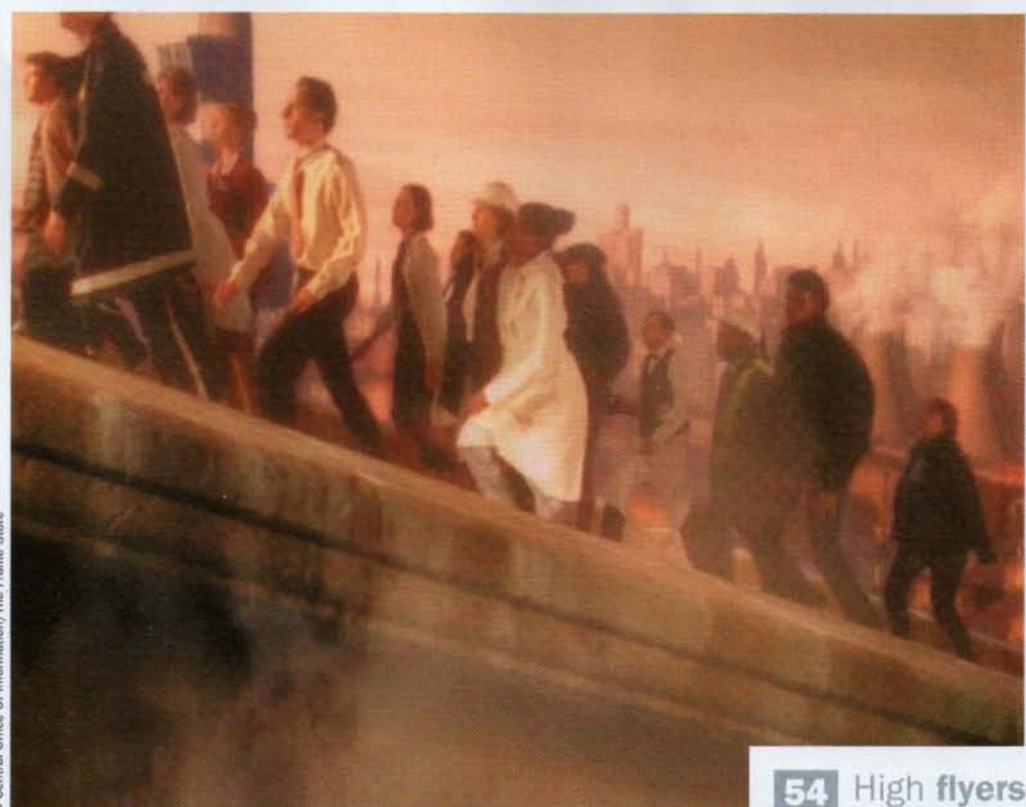
Cover image: From Central Office Of Information TV campaign, created by The Frame Store











© Central Office Of Information/The Frame Store

6 News





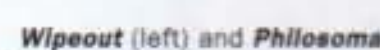



Virtua Fighter 2 (left) and **Ultra 64** (right)

21 Prescreen



Darkstalkers (left) and **Sega Rally**

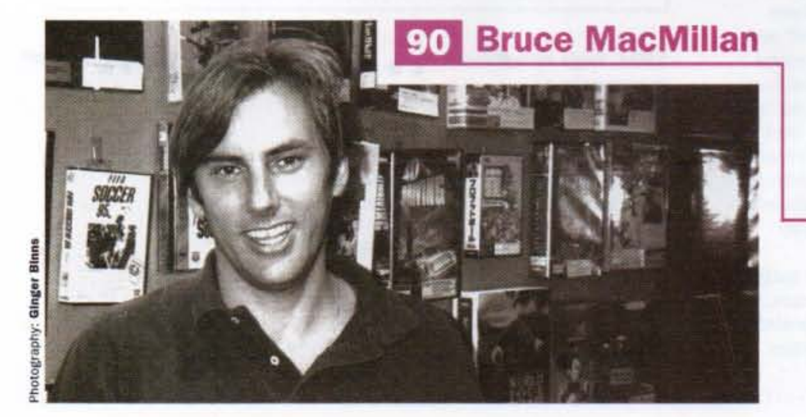


Wipeout (left) and *Philosoma*






90 Bruce MacMillan



Photography: Ginger Binns

Sega hatches **Saturn 2/page 6** • **Sega** buys into PC graphics/**page 9** • **Ultra 64:** first development kits shipped; December launch likely/**page 10** • **Virtual Boy** launches in Japan/page 12 • **Live '95/page 13** • **Develop 95** attracts big names/**page 14**



The latest **news** from the world of interactive entertainment

US defence corp holds key to **Sega** plans

The world's largest military contractor is proving crucial to Sega's strategy

Amidst the furore surrounding the launch of the Saturn in the Western hemisphere, **Edge** has uncovered details of a follow-up machine under development at one of Sega's affiliate companies.

Florida-based defence and NASA contractor Lockheed Martin – pioneer of the graphics technology incorporated in Sega's Model 1 and Model 2 arcade boards – has been working on technology for a higher-specification Saturn since last September. It's thought that this second-generation machine will be made available to developers late next year.

It's not unusual for a company in the business of selling videogames hardware to begin work on a successor system before the release of its market-ready hardware. However, in the case of the Saturn, the tide of disappointment that swelled from developers and internal staff over the machine's fundamental shortfalls and architectural untidiness has forced Sega to adopt a strategy that may result in the original machine (which is still well under a year old) being prematurely upgraded or perhaps even phased out altogether.

The original Saturn was subject to a host of development hiccups. Shortly after Sony's announcement of the PlayStation back in November 1994, Sega scrambled to complete a redesign, working with Hitachi to increase the specification of the Saturn it had planned (which included just a single SH-2 and was closer to what eventually became the 32X). The resulting hardware was a concoction of silicon that has failed to endear Sega to its developers. When Sega got its first glimpse of what Sony had in store, it immediately looked for a way out. →

Saturn 2 will use Lockheed Martin's R3D/100 chipset for its advanced 3D abilities



After developing Model 2 (*Desert Tank*, above) and the forthcoming Model 3 for Sega, Lockheed Marietta is now working on Saturn 2

LOCKHEED MARTIN





Although Sega is making great efforts to improve the quality of the Saturn's 3D (latest *VF2* shots, left and above), the system may find it tough going in 1996

→ The decision to procure the expertise of graphics specialist Lockheed Martin was based on the company's previous achievements, including the co-development of the Model 1 (*Virtua Racing*) and Model 2 (*Daytona USA*) boards and its range of Real3D polygon chips. Sega initially approached Lockheed Martin in the autumn of 1994 to design a new gamebox that would replace the Saturn – which was due to ship two months later in Japan – but due to the strong relationship between Sega and Hitachi (Sega Of Japan's number two is thought to be a Hitachi supporter) it never happened.

Now Sega has conceded internally that Saturn will face tough competition from the PlayStation and will not be able to match the onslaught from the Ultra 64 in 1996. Lockheed Martin has therefore been given the go-ahead to start work on Saturn 2, although it's not yet known exactly what form it will take. The current understanding is that the system will be a standalone console, but it's possible that Sega could save money by using the existing Saturn as an I/O device, CD drive and power supply.

As with Sega's coin-op IG boards, Lockheed Martin will be concentrating on the graphics side of Saturn 2, providing a R3D/100 graphics chip (see **Edge** 22) which includes both a geometry processor and a graphics processor. It's quite possible that Hitachi will supply the front end (possibly PowerPC-based) – it was rumoured that Yu Suzuki and other Sega coin-op honchos had wanted Lockheed Martin to handle the whole project, but this was vetoed internally because of delays with LMC's development of the Model 3 IG board.

The division of Lockheed Martin Corporation responsible for Saturn 2 and other IG hardware is the Information Systems group, headquartered in Orlando, Florida. This group was originally part of General Electric Aerospace and was located in Daytona Beach, Florida (across the street from the Daytona International Speedway). After the completion of the Model 1 arcade board, GE Aerospace was bought out by Martin Marietta and was integrated into the Orlando Information Systems group. Martin Marietta merged with aerospace giant Lockheed in April this year.

LMC's involvement with Sega dates back to General Electric's co-development of the Model 1 board

Continued next page



These images were taken from a single-frame renderer, register compatible with the R3D/PRO-1000, running on a Sun workstation. The final Model 3 board will offer unrivalled low-cost 3D performance





Who is it?

This USC graduate directed three films before devoting his time to his eponymous company, which leads the world in special FX and sound post-production and is a major force in the games industry

Hasbro kills $59m VR set

Hasbro's plans for a home virtual reality games machine (see Edge 20) have been scrapped, with the company stating that chip costs were too high to allow a massmarket price. Based on Argonaut's *BRender* software, the VR project has cost Hasbro an estimated $59 million since development started in 1992 – $36 million in 1995 alone.









Daytona USA (top left) and *Sega Rally* (above) are examples of the quality of textured 3D that can be achieved on Martin Marietta's Model 2 board (far left). Namco's System Super 22 (*Rave Racer*, left) is the leading coin-op IG

it is...

George Lucas, who prospered under the auspices of Francis Ford Coppola before turning Industrial Light And Magic, LucasFilm, and its computer game arm LucasArts, into the most respected names in their respective fields

first used in *Virtua Racing*. When Sega's own engineers failed to make significant progress towards an advanced texture-mapping version of their leading IG board (what would become Model 2), the US company was called in to lend assistance, and Model 2 appeared in early 1994. At the time, it was known that Yu Suzuki was keen to give the whole project to Lockheed Martin, not just the IG (image generation) side.

As well as the development of Saturn 2, LMC has been central to the work on Model 3 – Sega's hugely delayed successor to the technology behind *Daytona USA* and *Sega Rally*. This ultra-high-end board was supposed to be ready in time for three Model 3 games due for release this year. As well as *Virtua Fighter 3*, **Edge** has learned that the lacklustre *Indy 500* (see page 39) was originally targeted for Model 3, but delays in the board's progress meant it was coded up for Model 2 instead. It is also understood that Lockheed Martin is still working on Model 3 prototypes, with testing still some way off.

Whereas Model 2 was a combination of Sega's Model 1 polygon engine technology and a Martin Marietta-designed texture-mapping board, Model 3 has little in common with its forerunner. It is based on LMC's high-end R3D/PRO-1000 – a high-specification chip designed for low-cost, high-end visual simulations and capable of delivering 750,000 textured polygons onscreen – which is unrelated to the R3D/100 destined for inclusion in Saturn 2. It also uses a Hitachi-designed PowerPC host board.

There appears to be little doubt that, when it finally appears, Model 3 will be the most powerful low-cost IG board in existence, despite the ground gained by home entertainment systems currently in development. One expert close to the project commented: 'Model 3 was created for one thing, and one thing only – to push lots of textured polygons for as few dollars as possible. Nothing compares to it on those terms.'

Where Model 3 will leave new high-tech rivals such as 3DO's M2 for dust is in the amount of RAM available. **Edge**'s contact points out: 'You can build a box that can pump three million polygons only if you have enough RAM to store 300 million polygons' worth of models. It doesn't mean anything for a machine to be able to MIP-map textures if you don't have enough VRAM to store multiple copies of each map at different resolutions.'

Since Model 3 is now unlikely to appear until the 1996 JAMMA show in Tokyo (and with Model 4 already being specced up), it seems likely that Sega's arch-rival Namco could get a considerable head-start in the entertainment IG arena with its rumoured System 23 board. More details on this will probably surface at JAMMA '95 – expect a full report in **Edge** 27.



Model 3

In most IG (image generation) hardware there are two parts: a 'host' that basically runs the game (in the case of Sega's Model 3 board this is a Hitachi-designed PowerPC front end), and a graphics part that draws the scene. The host runs the 3D world, performing the collision and telling the graphics hardware (which does the rendering, texture, lighting etc) where to put the polygons. Lockheed Martin's R3D/PRO-1000 chip is expected to be arranged in parallel in the Model 3 board, with each chip capable of rendering 750,000 textured, shaded, fogged and anti-aliased polygons every second. Roll on, *Virtua Fighter 3*...



VF 2.1

Just released in Japan is the first official update of the phenomenally successful *Virtua Fighter 2* coin-op. Sporting slightly different graphics and even more balanced characters, it seems to be intended as nothing more than a curiosity for the *VF2*-mad Japanese market. Don't be too surprised if this version never makes it to your local arcade.

Sega takes PC path

Sega enters the PC arena with support for a new 3D accelerator





The rush to embrace the explosive PC market is proving too much for console manufacturers to resist. As predicted last month, Sega has chosen to link up with a Silicon Valley start-up, nVidia, for a mutually beneficial deal that involves the transfer of hit Saturn titles to nVidia's PC graphics accelerator. This exclusive agreement will give Sega a foothold in the Pentium PC market and will provide a major boost to nVidia's NV1 Multimedia Accelerator, first announced last spring.

The NV1 is claimed to be the first PC graphics chip to combine high-speed 3D rendering and texture mapping with GUI acceleration, wavetable audio and video-playback acceleration. However, doubts were initially raised about the chip's unique quadratic texture mapping (QTM) approach to 3D rendering, which makes it incompatible with any existing applications or 3D APIs.



The NV1 multimedia accelerator (top) gives PC owners advanced 3D graphics performance (realtime demo, above)

The company has sidestepped this concern by offering full support for *Windows 95* while allowing Sega to port its games directly to the nVidia chip (which apparently includes PlayStation-level 3D performance and the added bonus of true 3D and perspective texture mapping).

According to an nVidia spokesman, 'Sega's analysis was that only nVidia offered a single, coherent hardware environment to which they could port the highly dynamic 3D games of the Saturn console.'

It's expected that Sega will bundle NV1-compatible titles with the PC card when it goes onsale at a sub-£200 price nearer to Christmas. If this extends the viability of the Saturn format, then Sega will have found itself a useful ally. **E**

Advertainment

Edge's showcase for the worldwide recognition of interactive entertainment advertising goes into print

Company: **Apple**
Product: **Macintosh**
Date: **August 1995**
Origin: **UK**

1 Introducing Windows 95. It lets you use more than eight characters to name your files. Imagine that.

2 Introducing Windows 95. It lets you drop files anywhere you want on the desktop. Imagine that.

3 Introducing Windows 95. It has a trash can you can open and take things back out of again. Imagine that.

4 Imagine this.



Despite the hoo-hah surrounding the release of Microsoft's *Windows 95*, Apple is obviously not impressed. In a recent ad placed in UK trade journal *Mac Week*, the US computing giant subtly pointed out that most of the new features that PC owners are getting so excited about have in fact been an integral part of the Macintosh operating system for more than a decade. It's just a shame that Macs are so much more expensive than PCs that few people can afford to take advantage of them...

Company: **Sony Computer Entertainment**
Product: **PlayStation**
Date: **August 1995**
Origin: **UK**



WHEN YOU OPEN YOUR MIND TO THE POWER OF PLAYSTATION, IT'S HARD TO PUT THE LID BACK ON.





The initial UK advertising campaign for the PlayStation preys on the UK public's ignorance about and ambivalence towards videogames: 'Be careful. be very careful... The second you plug it in, it hits you. Like using an UZI 9mm as a nasal decongestant... PlayStation's 24-channel CD-quality sound chip adds unheard-of depth and dimension to gameplay.' Apparently, it also makes your head explode.



Developers get their hands on **Ultra 64**

Despite widespread scepticism, Nintendo's 64bit machine is now close to reality

Nintendo's Ultra 64, the 64bit system first announced two years ago and dogged by rumour and gossip ever since, has taken a significant step forward in its progress from drawing board to shop window. In early August, selected companies finally received Ultra 64 development systems, and many found themselves offering high praise for hardware which only months before they were dismissing as an elaborate Nintendo smoke-and-mirrors trick.

Perhaps the clearest indication of the new system's power was that Nintendo's competitors had said it couldn't possibly exist: the chips would be too expensive, and the package would at best offer performance only slightly better than what Sony was already selling in the PlayStation.

Not so, say those who have spent time tinkering with the new development kit. If the Ultra 64 has any problems as a marketable next-generation product, they're not in the general hardware, which has a set of graphics and audio features significantly beyond the current limits of home consoles. Based on final specifications received by developers, the Ultra 64 is indeed a $250 games console, with resolution modes from 320x224 to 1280x1024, 32bit colour, three megabytes of memory, and a digital signal processor for 16bit audio and 44.1KHz sampling.

Eclipsing virtually every 3D feature found in the PlayStation and Saturn combined, the system promises to deliver over 600,000 texture-mapped polygons per second, plus realtime anti-aliasing, realtime polygon count reduction, realtime Tri-Linear MIP-Mapped Interpolation (TLMMI) and tri-linear perspective correction.

While the average consumer will no doubt find the sheer visual power of the Ultra 64 astonishing, developers were more surprised by the accuracy of early SGI hardware simulations than anything else. While still a small step below 3DO's M2 in overall processing muscle, Nintendo's new toy has now gone from paper to software mock-up to live development hardware, jumping through flaming hoops as promised while delivering an unprecedented price-to-performance ratio.

NINTENDO ULTRA 64

One developer, who asked that his name not be used, says that the hardware 'leapfrogs the current 32bit generation of hardware entirely', offering many coders power beyond their current conceptions of the term. A cosy development environment, considered a must-have by serious programmers, rounds off the package.

But there's always another side to any story, and for the Ultra 64 the problems lie, predictably, in the areas of storage and memory. Since the start, Nintendo has insisted upon retaining the pricey cartridge software format as the means by which the main hardware can be kept inexpensive. With developers now starting to code up Ultra projects which would have consumed 40 or 50 megabytes on a PC hard drive or arcade motherboard, Nintendo has informed licensees that their first software releases cannot exceed 8Mb, an announcement which has sent chills through the →



The Shoshinkai show – otherwise known as Famicom Space World – is where Nintendo will unveil the finished Ultra 64 in November

The great Ultra 64 giveaway

The revelation that the finished Ultra 64 will be on display at the Famicom Space World (Shoshinkai) show on November 25-26 (see story right) is as good an indication of Nintendo's intentions as anything that has emerged from the Nintendo camp since the 64bit saga began. It means that the machine is now all but certain to be launched in Japan in December – as Hiroshi Yamauchi hinted to the Japanese business press in early May.

Nintendo has also announced it will give delegates the chance to win 100 Ultra Famicom units and 300 games on completion of a questionnaire at the show. This implies that there will be three games ready to coincide with the launch in Japan. No details have yet emerged about which games they are, but everything should become clear soon. *Ultra Mario*, anyone...

Data stream

Global retail sales of licensed movie merchandise in 1994: **$102 billion**
Jurassic Park's box-office receipts during its opening weekend: **50.2 million**
Growth in the home computer market during the second quarter of 1995: **30 per cent**
IBM's turnover during the second quarter of 1995: **$17.5 billion**
DEC's turnover during the second quarter of 1995: **$3.7 billion**
Microsoft's turnover during the second quarter of 1995: **$1.6 billion**
Apple's turnover during the second quarter of 1995: **$2.5 billion**
Number of rooms in Buckingham Palace: **602**
Number of people who died as a result of World World II: **55 million**
Maximum altitude at which a bird can fly: **25,000 feet**
Number of breaths taken by the average human adult during a single day: **23,000**
Amount of time the average man will spend shaving during his lifetime: **145 days**
Number of verses in the Greek national anthem: **158**
Time it takes for the sun's light to reach the Earth: **8.7 minutes**
Number of PlayStations Sony aims to sell in the UK in the first six months after launch: **175,000**
Average number of accesses to Future Publishing's World Wide Web site (http://futurenet.co.uk) every month: **2 million**
Most popular PCB coin-op during August 1995: ***Striker 1945***
Number of hydrogen atoms needed to cover the average full-stop: **2 million**
Nickname for Microsoft's *Windows 95*: **Macintosh 89**

→ development community and prompted some developers to scale back their original plans. Ultra 64 sprite-based arcade translations such as Williams' *Mortal Kombat 3* – a game which, with reduced colour palettes and heavy compression, takes up 4Mb on the SNES – may wind up looking better on the PlayStation, a machine with less power and more storage capacity. Similarly, developers are saying that while the system's audio chip is perfectly adequate, sample space is too tight to allow Ultra soundtracks to compare with the best a CD-ROM equipped machine can do.

Nintendo's and Silicon Graphics' innovations, however, heavily outweigh the imperfections of their new hardware. Specifications for the machine's 'revolutionary controller design' are trickling out of developers, revealing that Nintendo's plan is to include two separate directional mechanisms – one digital and one analogue – on the left and middle of the controller respectively, and toss in a number of buttons on the controller's right for good measure.

The digital joypad will behave like every joypad from the days of the Super Famicom, moving your in-game steering wheel entirely left when you press left and so forth. Analogue control will be more precise, giving your steering wheel a slight turn when you press slightly and a full turn when you press fully to one side. At the time, those privy to early sketches of the SFC's controllers thought a total of eight buttons to be extreme, begging the question of whether two separate directional controls and multiple action buttons will confuse the average gamer. Only time will tell.



Edge has learned that developers are already secretively working on cutting-edge software for the Ultra 64, with most of the titles under development hiding behind the vague descriptive phrase '3D polygon game.' Licensees' non-disclosure agreements are said to be among the most restrictive in the history of the games industry, preventing even development team members from discussing the details of unannounced projects with their fellow employees. As the next few months pass, Nintendo intends to release handfuls of licensed developers' names as teasers for a worldwide audience, slowly making a public case for the Ultra system that goes beyond just *Killer Instinct 2* and *Cruis'n USA*.

The materialisation of development kits is not the only new episode in the Ultra 64 story. In another surprise development, Nintendo has just announced that 100 finished machines will be exhibited at Tokyo's Shoshinkai show in November, along with ten playable Ultra 64 games.

With Shoshinkai only months away and Nintendo promising a 1650-square-metre display, **Edge** can only imagine what's to come... **E**

What is it?

This selection of now-deserted warehouses and offices in London, Fareham, and Eastleigh used to be hives of commercial activity, handling the UK operations of a major videogames company

Provisional Ultra 64 tech specs

CPU	• 64bit RISC (reduced instruction set chip) microprocessor (custom version of R4200) @ 100+ MHz • 100+ MFLOPS • 100+ MIPS • 500Mb per sec bus bandwidth
Graphics	• Custom 64bit graphics/64bit DSP chip @ 100+ MHz (both CPUs are on the same chip) • 100+ MFLOPS • 100+ MIPS • 16bit, 24bit and 32bit colour textures and co-ordinates • Resolution: 320x224, 512x448, 640x480, 1024x768, 1280x1024 (the last two resolution modes are for HDTV only) • Polygon performance: 600,000+ RealityEngine textured polygons per second at 60fps
Software memory	• 3Mb main RAM running at 500MHz • Cache-coherent memory system • 128bit bus
Audio	• 64bit DSP @ 44.1KHz • Unlimited voices per audio track and channels • 64+ channels
Storage	• Cart size: 64Mbits, 128Mbits, 256Mbits or 512Mbits • 30-1 realtime compression



Virtual Boy meets muted reception

Nintendo's 3D console has failed to excite Japanese gamesplayers

it is...

Nintendo UK, or rather the entity formerly known as Nintendo UK. The big N has decided to axe over 140 jobs and replace its UK subsidiary with a new distribution partner and a small management staff

On July 21, Nintendo launched its new 32bit console in Japan, where, typically, queues form outside stores on the day of a new hardware launch and stocks sell out quickly. However, Virtual Boy was greeted with little of the fanatical enthusiasm associated with Japanese videogaming, and, more unusually, there was no first-day sell-out.

Perhaps sales were adversely affected by the middling quality of the games – unlike every other major Nintendo hardware launch, there was no *Super Mario* game and nothing of the calibre of *F-Zero*, *Pilotwings* or *Tetris*. Of the five VB titles onsale, T&E Soft's wireframe shoot 'em up *Red Alarm* and Nintendo's own *Galactic Pinball* make best use of the 3D effect – surely the machine's only real selling point. Hudson's *Panic Bomber*, a blend of *Tetris* and Puyo Puyo, plays well enough, but it's a 2D game with only a smattering of 3D window dressing. *Mario's Tennis* – presumably the lead title of the five – is a standard tennis game with a fairly effective 3D court. Most disappointing, though, is *TeleRoboxer*, which plays like a tired old NES game.

Cosmetically, the Virtual Boy is an appealing, sturdy little unit mounted on black metal legs and powered by six AA batteries stored in the strange-looking controller. The headset – very reminiscent of a pair of *Star Wars* binoculars – has a soft neoprene eyeshade which can be detached for cleaning. The controller itself is well designed, fitting snugly into the hands, with twin Game Boy-style D-pads under each thumb, two buttons next to each pad and two buttons on the bottom underneath the D-pads.

There's no denying that the Virtual Boy has great novelty value, but the basic demands of the console on the player will ultimately limit its appeal.

The Virtual Boy has already spawned a one-off magazine in Japan from ASCII, called Virtual Boy Tsushin (from the same stable as Famicom Tsushin)



Virtual Boy failed to sell out on launch in Japan, and the initial titles are far from outstanding, reinforcing doubts about its viability

The playing position – hunched over a table, with head and neck fixed – is awkward, and staring into the machine's red lenses for any length of time is a strain. Nintendo was obviously well aware of these limitations as an automatic pause function is built in, interrupting play at certain times to give the player a much-needed screen break. The often grating sound – which is no real improvement on the Game Boy's – is another feature that may deter potential players.

With no big-name games in the pipeline and Nintendo now clearly focusing its attention on the Ultra 64, the Virtual Boy could be in for a rough time in the run-up to Christmas. However, it shouldn't be forgotten that, with the Game Boy, the company successfully created a new market for itself. And, as the secrecy surrounding the Ultra 64 and SNES products like *Yoshi's Island* has proved, you can never tell what the tight-lipped Nintendo has up its sleeve.

3DO hits rocky patch

The 3DO Company suffered a set-back recently when Japanese consumer electronics giant Toshiba axed its plans to use 3DO technology in a car navigation system. Toshiba's decision (which was due to 'changes in the market environment') caused 3DO's stock price to drop 13 per cent from $13 5/8 to $11 5/8.

The fortunes of The 3DO Company have always been something of a rollercoaster. While its revenues tripled in fiscal year March 1995, the company has suffered losses of $46.3 million and $51.4 million for 1995 and 1994 respectively. On a more positive note, however, the company recently secured a $16.6 million cash injection from institutional investors.

Live '95 leads the way

See the latest hardware and software at this year's main event



Live '95 should be even more popular than last year's well-attended event (above)

Live '95, the UK's premier consumer electronics show, takes place this autumn at Earls Court in London. Running from Tuesday, September 19 to Sunday, September 24, it will feature the latest innovations in the fields of computers and videogames, hi-fi, TV and video, music, multimedia and the Internet. A wealth of hardware and software will be on display, and major manufacturers will be present to demonstrate their products and answer questions.

The highlight of Live '95 for gamefans will undoubtedly be the Ultimate Future Games Show, featuring 300 free-play machines – PCs, SNESs, 3DOs, PlayStations, Saturns, Jaguars and Mega Drives – running all the latest games, among them *Ridge Racer* and *Virtua Fighter*.

In addition, the Future Showcase stage will offer a range of challenges and competitions, with celebrity guests competing against visitors for the accolade of games champion, and prizes ranging from badges to a £3000 arcade machine.

Among the many big names confirmed to attend the event are Nintendo, Atari, Electronic Arts, Bullfrog, Microsoft, Delphine, Origin and Konami. Nintendo is trundling its 21-ton 'Nintendo Challenger' artic into the Earls Court arena, offering visitors



The highlight of Live '95 will be the Ultimate Future Games Show, featuring 300 free-play machines

the chance to play *Donkey Kong Country 2* and *Killer Instinct* for prizes.

Doors open from noon until 9pm on weekdays, and from 10am to 6pm on weekends. Tickets are available on the door or from any London Underground station. Tickets cost £8 (adults) or £4 (children), with a discount of £2 for adults and £1 for children after 5pm on weekdays.

Develop!: learning the rules of the game

Some of the biggest names in the industry will be at Develop! 95

Develop! 95 is a unique conference which offers developers the chance to gain a better understanding of the mechanics of game production. Organised by BTP in conjunction with Blenheim and sponsored by **Edge**, the event is linked to Europe's biggest computer trade exhibition, ECTS – which takes place twice-yearly in March and September – and will attract many of the biggest players in the development community.

Develop! 95 will consist of four two-hour sessions spread over two days, allowing delegates ample opportunity to sample the attractions of the ECTS proper. The first session on September 11 is entitled 'The Sound', and will offer a comprehensive guide to the latest developments in interactive music. Topics explored range from the relationship between the recording artist and the audiovisual medium, to the creative exploitation of production tools and new CD standards.

The second seminar is called 'The Story', and will deal with storytelling in an interactive medium. Subjects will include the relationship between display formats and narrative, the development of intelligent computer-controlled characters, and interactive narrative techniques. The speakers will be people who have worked on such diverse projects as *Beneath A Steel Sky*, *Wing Commander* and *Eric The Unready*.

The second day, September 12, kicks off with a session labelled 'The Vision', presented by none other than Steve Jarratt, founding editor of **Edge**, editor of the forthcoming official PlayStation magazine from Future Publishing, and a veteran games journalist with eight years' experience in the industry. It will cover in depth the creative potential of the latest computer-generated graphics techniques, from advanced interface design to virtual actors, body suits and laser scanners.

The final session is called 'The Interaction' and deals with one of the most contentious aspects of today's games industry: the trend towards sacrificing interaction for the dubious pleasures of pre-rendered sequences and FMV cut-scenes, which require no input from the player. Advice on achieving effective interaction will cover environment generation, encoded cultures, and realtime world generation. The session concludes with a question and answer session which offers you a unique opportunity to quiz the acknowledged greats of the interactive entertainment industry, including Peter Molyneux, Sid Meier and Jon Ritman.

Develop! 95 takes place on September 11-12, 1995, starting at 10am on Monday 11 and 9am on Tuesday 12. All events will be held at the Grand Hall, Olympia, London, and each session costs £75+VAT (£88.12 including VAT).

To book, or for further details, contact John Murray at BTP on 0171 336 0066.





Bullfrog's Peter Molyneux (top) and Sid Meier, creator of *Civilization* (above), will be among the games industry luminaries offering advice at Develop 95







New Sony launch date

It has been revealed that the PlayStation will now go onsale in the UK at the end of September, rather than at the beginning of the month as previously planned – the 28th and 30th have both been mooted. (UK box artwork for *Wipeout*, above.)

Essential reading

Big Blues
The Unmaking Of IBM



- By Paul Carroll
- Weidenfeld & Nicolson
- £6.99
- ISBN: 0-297-81315-3

It's October 1981, shortly after the launch of the IBM PC. A large crowd heaves outside a computer store, trying to gain entry. A man produces a gun, puts it in his mouth, pulls the trigger, and fails to kill himself. He later explains that he was trying to bestow significance on his final act by performing it in front of the largest crowd he could find.

A testament to the frenzy engendered by the arrival of IBM's wonder product? Not quite. The store was located in New York state, not far from IBM headquarters. The crowd was composed largely of IBM employees eager for a first look at their company's product in the only place they could do so. Day after day they stood six deep in front of the little machines, gawping. The poor customers couldn't get near the things.

Paul Carroll's excellent and entertaining book tells of how, in the space of a decade, the closed society of 400,000 men in blue suits and white shirts that formed the most powerful corporate body in computing history achieved the total detachment from reality that marks a mature cult; and how, like the crew of some mad Titanic, they were steered to the centre of the iceberg by a benighted management reporting and analysing their progress on overhead projectors (an IBM must-have item). By 1993, when the old guard departed in their life rafts to be replaced by Lou Gerstner, IBM's first non-homegrown boss, the company was on the brink of ruin.

Paul Carrol spent seven years writing about IBM for *The Wall Street Journal* and is clearly passionate about his subject. His forte is character, anecdote and analysis, rather than jargon and bogus hindsight. Near the end, however, the book begins to falter due to repetition, becoming like *Flash Gordon* – an endless series of cliffhangers in which the hero never dies. By the time Gerstner arrives in the last chapter it is already too late. Carrol has had enough and roundly dismisses the new man's chances of success.

Gerstner has in fact turned the company right around, and IBM now seems to have escaped the corporate disaster it once faced. He started by sacking about half the workforce, which seems to have woken the other half up a treat. But that's not the stuff of dreams.

viewpoint



Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

How does The 3DO Company ever expect the 3DO to become a global standard if the company itself can't stay on one platform long enough to ensure its growth in the marketplace? The Multiplayer has been around for two years now, but there is a distinct lack of quality software available for it, and it doesn't look like there will be much in the foreseeable future. Why? Because once the company got the machine into the shops, it turned to the next level of hardware and began designing a new machine, leaving the FZ-1 and a handful of thirdparty software developers to fend for themselves. The only thing that has kept the machine afloat are the few decent titles the 3DO has to its name, such as *FIFA Soccer* and *Road Rash* (both by Electronic Arts), and one or two titles by Crystal Dynamics. At the time of launch, 3DO claimed that there were over 300 developers signed up for the platform, and that this would ensure its success, but where are they now? Out scouting for new and more powerful systems to play with, some of them ready to sign up for M2.

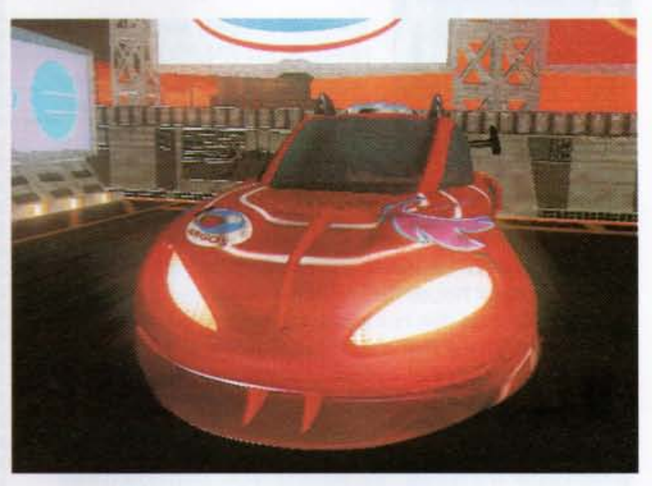
Ah, M2. The 3DO Company's salvation. I think not. Right now it is wooing potential developers with its new system, just as it did two years ago with the original player. Hundreds of *potential* developers means nothing; how many of the initial 300+ have pulled out of the original 3DO project? I don't know for sure, but it must be going on for half of them at least. And it will be the same with M2. No sooner will it be released than Trip Hawkins and Co will go off in search of the next level, deserting their customers just when they are needed to back the system up. The 'global standard' has become a 'global failure' thanks to the company's lack of support and ridiculous pricing. The other reason the global standard has failed is because no-one can afford it! 3DO+MPEG1+M2=Bankruptcy!

I'm afraid to say it, but Nintendo and Sega reign supreme. Long live Mario!

Anon

The 3DO Company is caught between the devil and the deep blue sea. Either it channels all its efforts into 3DO Mk1 in the desperate hope that software quality will enable it to compete with technically superior machines, or it starts talking about its second wave of technology, which will give it an advantage over its rivals but alienate adherents of the original machine. It does seem unfair that Mk1 hasn't been given the chance it deserves, but to prevent existing 3DO owners from switching to a rival platform, The 3DO Company does need to assure them that their console will not become obsolete. Hopefully, this will not be at the expense of software development for 3DO Mk1.

The 3DO Company has realised that its strategy of relying upon thirdparties for quality games doesn't work, so now it is emulating Nintendo's 'Dream Team' approach and focusing its support on a select band of developers. If this results in some good launch software, it can only be a good thing – not only for 3DO but also for the consumer.



Early M2 graphical demos certainly look impressive, but to what extent will this translate into the development of quality games?



Why hasn't anyone taken Bullfrog's programming tutorial concept further? asks Russ

First things first: cool magazine. You produce one of the few mags that I read from cover to cover. Keep up the good work.

You're probably aware that Peter Molyneux's Bullfrog company has produced a couple of magazine-/disc-based programming tutorials for the Atari, Amiga and PC – a sort of gentle introduction into the world of games programming. These were fine – in fact, I even followed a few. But what the frustrated, non-computer-science-degree games programmer needs is a more structured approach to the videogames programming world.

I've been involved in 'computers' and videogaming from the near beginning. I played

Continued

Pong, owned a 2600 VCS console, Atari 400/800, C64, Atari ST, Amiga and Archimedes, and currently use a 486DX2 blah blah blah CD-ROM blah. I can program most of them to some degree, but none to a level that would get me a job in the industry. You're also aware that the days of the bedroom coder are as good as over. So what I want is for an experienced gaming professional to teach me C on a PC and introduce me to 2D and 3D graphics techniques. It would need to be interactive, so I could ask questions. I don't expect this service to be free, and a very good place to locate it would be the Internet, using e-mail, newsgroups or whatever. At the end of the course, we may have produced enough correctly skilled developers to satisfy the demands of the British gaming industry.

Russ@cityscape.co.uk

Judging by the contents of **Edge**'s mailbag each month, a great many people share your frustration at the lack of training courses for novice or inexperienced programmers. A Net-based service does indeed sound like a viable proposition and would undoubtedly be hugely popular.

Prospective games programmers may also find this issue's feature about getting into the games industry helpful – turn to page 54.



Why doesn't Edge feature more titles like *Return Fire* instead of concentrating on 'me too' genre games, wonders Janek Alexander

In **Edge** 20, you write that the Macintosh OS 'offers virtually no graphics instructions (apart from *QuickDraw*, used to produce geometric shapes for windows and dialogue boxes)…'

This is quite simply incorrect. *Color QuickDraw* (available since 1987) offers extremely versatile pixel-copying routines that take advantage of multiple monitors (which can have different depths and sizes) and device independence. *QD* also provides a wealth of other tools that other OS vendors are only now starting to provide. Tools such as Regions, collision detection functions, offscreen buffers which are maintained by the system, and multiple colour models, to name but a few. This may not be sexy parallax scrolling stuff, but these tools can often be indispensable when writing games for a complex OS.

You also say that 'the Mac's unified operating system is an integral part of the machine, and games coders need a great deal of skill to bypass it effectively.' I'm not sure where this myth started, but it is definitely a bona fide urban legend. On the Mac, you can easily bypass the OS and take over the whole machine if you really want to. Games programmers do it all the time. In fact, it's much easier to bypass the OS than actually implement many aspects of it…

However, the Mac certainly has had its share of problems in the gaming department. There has never been a uniform low-resolution mode on any Mac, and page flipping abilities have been constrained to a small number of models. This has made it very hard in the past to produce scrolling platformers and the games that other platforms have always taken for granted, because the programmer has to rely on the pure grunt of the machine instead of being able to call upon hardware support. One advantage of this, though, is that Mac gamesters have never had to settle for bastardised games running in 320x200 that feature pixels the size of bricks.

Apologies and sniping aside, though, the future of Mac gaming is looking better by the day. The number of companies that are now working on Mac titles is growing rapidly, as Apple ships more machines that have the horsepower to be 'game friendly'. I reserve judgement on the Pippin, but there are some pretty cool Power Mac games on the way…

David Wareing,
dwareing@apanix.apana.org.au,
Australia



The Apple Macintosh isn't exactly renowned for original games, but David Wareing reckons Edge has underestimated its potential

Edge may have misrepresented the Mac's games potential to a certain extent, but this just shows how little the machine is understood in the mainstream games world. **Edge**'s argument still holds true: the Mac has never been a recognised games platform. The future of Mac gaming may be looking brighter, but as long as the machine continues to be overshadowed by the PC, it is unlikely that developers will apply themselves to overcoming its drawbacks as they have with the PC.

Is it an **Edge** rule that every issue of the magazine must feature a minimum of one beat 'em up, one flight sim, one space epic, one racing game, one cute platformer, one elf-ridden RPG and one *Doom*-u-like? Maybe you could just do a round-up of non-genre games – games software that isn't just 'me too'. *Return Fire* springs to mind, but there must be others worth analysing.

Janek Alexander

True, most games that are featured in the magazine are representative of one genre or another, but this is more an indication of the lack of originality in games development today than a deliberate policy on **Edge**'s part to include an example of each genre in each issue. Inventing new game styles usually entails mixing elements from several established ones – after all, isn't *Return Fire* essentially just another search-and-destroy game?

I am writing to tell you that my 13-year-old son was very upset after buying **Edge** 21. As it listed the Amiga on the front cover, he naturally assumed there would be an article about it inside. As your magazine is packed in a plastic bag, he wasn't able to check inside before buying it. so you can imagine how upset he was after paying £3.50 then finding nothing about the Amiga.

Would it not be fairer to children to only list the names of computers that actually appear in that issue?

C Mason,
Sheffield

Edge is a multiformat magazine, and as such it has to cover a wide variety of different computers and consoles. The list

Continued next page

of formats on the cover is not a table of contents but an indication of **Edge**'s remit. The Amiga, just like all the other machines in that list, is not guaranteed a place in each issue; it has to justify its inclusion. With so many machines fighting for attention, **Edge** cannot afford to give one of them more space than it deserves: the Amiga did not feature in **Edge** 21 simply because it had nothing new to offer that month, while other platforms, like the PlayStation, 3DO and PC, did.

Ironically, if you had bought **Edge** 22 or **Edge** 23 instead, you *would* have found some Amiga coverage – respectively, the story about Escom's resurrection of the brand, and a comprehensive history of Commodore. But the bottom line is that **Edge** is not an Amiga magazine (the lack of the word 'Amiga' in its name is a dead giveaway). If that's what you want, you'd be much better off buying something like *Amiga Format* or *Amiga Power* rather than a general games magazine like **Edge**.

Why does **Edge** keep defending the PlayStation? In **Edge** 20, a reader commented that the PlayStation had a tendency to 'fold' polygons at the edge of the screen – your reply was in defence of the console. Then, in **Edge** 22, another reader, apparently involved in software development, stated that this was, in fact, a serious problem of the PlayStation's 3D capabilities – your reply was still in defence of the console!

It seems odd that you so vigorously support this machine (and to a lesser extent the Saturn), while being the first to jump on the most minor shortcomings of other consoles such as the Ultra 64 (even before it has materialised). A delay becomes 'problems dog Ultra 64'; a report on the console is headed 'a chink in Nintendo's armour'.

While I understand that you are eager to support new platforms, are subjected to the bombardment of marketing from some manufacturers and are frustrated by the lack of information available from others, I urge you to try to keep a sense of perspective and objectivity in this fascinating, rapidly changing market.

Ben White,
bwhite@netspace.net.au,
Australia



Ben White accuses Edge of ignoring the PlayStation's 3D limitations and concentrating too much on graphical tours de force like *Tekken*

Given that the PlayStation is a fraction of the cost of a high-end Pentium PC and yet is considerably more powerful, its lack of perspective correction is a small and excusable omission. **Edge**'s response has been borne out by the opinions of 3D developers, most of whom admit that while the PlayStation's 3D does create problems, it is something that can be worked around. The Saturn's lack of 3D horsepower is an area of greater concern, but even in this case **Edge** dedicated a feature to how Sega is getting around the drawbacks. (Incidentally, the headline 'A chink in Nintendo's armour' referred to the fact that details were starting to leak through the company's heavy security cordon, not to any weakness on Nintendo's part).

Edge has never been 'bombarded' with information by any hardware manufacturer, least of all Sony. Although the magazine does its best to remain objective, part of its job is to inform its readers which system is the most technically advanced and which has the best software. If the PlayStation has the upper hand in both areas, **Edge** is not afraid to say so. Would you prefer it if you were fobbed off with the usual 'wait until both machines are released and then judge for yourself' stance adopted by other magazines?

In **Edge** 5 you announced Sega's contribution to the next generation of consoles. Eighteen months later, after a number of rumours and various specification changes, it's actually here. And it's early as well. Unbelievable.

And some of the adverts for the machine are unbelievable too. I can forgive Dixons for claiming that the Saturn is '900 times more powerful than the Mega Drive', but Comet has made a serious balls-up.

In an advert I found in a national paper, Comet claimed that the Saturn 'also plays Mega Drive cartridges'. Unless I'm mistaken, this is a complete fabrication. It shows that Sega's hurried launch means the retailers haven't been briefed about the hardware and so haven't got a clue.

Joe Cubé-Romero,
Orpington, Kent

Anyone trying to cram a Mega Drive cartridge into the Saturn will be disappointed to learn that *Virtua Racing* doesn't run 900 times faster. In fact, it doesn't run at all.

This is probably a slip-up by the retailer itself, although Sega has been known to use similarly underhand tactics in the States (see **Edge** 24).


Prescreen

Killing Time

Part ghost story, part Agatha Christie whodunnit and part *Doom*-style blaster, *Killing Time* is a real potpourri of genres





Format:	**3DO**
Publisher:	**Studio 3DO**
Developer:	**In-house**
Release date:	**Autumn**
Origin:	**US**







An expedition to the Middle East, a missing ancient Egyptian clock and a disappearing flapper are all ingredients in *Killing Time*'s convoluted plot



A choice selection of fire power from the none-too-choice opening level: a pistol (top left), a pump-action shotgun (top) and a genuine tommy gun (above)



With two major blasters in the pipeline, 3DO developers are jumping onto the maze shoot 'em up bandwagon in a big way. Any Channel's *PO'ed* (**Edge** 20) and the Studio 3DO title *Killing Time* are intended to restore confidence in the machine's ability to produce a playable *Doom* clone – confidence it lost when the execrable *Monster Manor* marked its first foray into blaster territory two years ago.

At first glance, *Killing Time*'s graphics engine looks dismal, especially compared to the likes of *Doom*. Movement is distressingly jerky and frustratingly slow at times, and many of the early levels consist of corridors with no floors or ceilings. But, unusually, *Killing Time* is not a game in which graphics are all-important. Its strength lies in its strong storyline, which unfolds gradually as you play and draws you into an increasingly intriguing and complex world.

Killing Time eschews the usual futuristic setting of 3D blasters in favour of a kind of 1930s haunted house environment. According to the plot, an ancient Egyptian clock with the power to give everlasting life has been stolen after its discovery on an expedition to the Middle East. The main suspect is the expedition's patron, Tess Conway, who, it seems, went AWOL shortly after the clock's disappearance.

The game drops you onto Tess's island home to discover exactly what has happened to said timepiece. Armed initially with only a small handgun, you wander around searching for clues and meeting the game's characters (whom the clock has transformed into spirit versions of their former selves)







The many ghosts in *Killing Time*'s wilfully confusing storyline take the form of shimmering, transparent video clips. The acting and production are remarkably unhammy and add to the game's pulp novel atmosphere





Bizarre monsters sit uneasily with the 1930s setting but certainly add to the amusement. Ducks wander around on the first level (above right), but the cleaver-tossing chefs are the best (top right)

via digitised video clips laid over the backgrounds. *Killing Time* is intended to be more of an explore 'em up than an out-and-out slugfest in the *Doom* mould, and you soon find that it pays to hang around and try to pick up snippets of information rather than rush off and blast away at everything in sight. At first, the information thus gleaned often seems to be irrelevant, but you generally find that it comes in useful later on in the game.

At this stage, *Killing Time* seems to involve rather too much wandering around and not enough blasting. And, in keeping with the 1930s context, the weaponry is relatively unsophisticated, comprising a revolver, a shotgun and a tommy gun. Somehow, popping away with a puny six-shooter doesn't provide the same thrill as letting loose with *Doom*'s BFG.

The game's first stage is especially disappointing, consisting of a desultory stroll through a garden maze. However, when you enter the mansion itself, things start to get a little more impressive – you'll need all your exploring skills to make any progress through the labyrinthine structure. There's also a nice selection of bizarre characters, ranging from zombie gamekeepers complete with pet ducks to fat chefs wielding evil-looking meat cleavers.

Killing Time looks like a valiant attempt to spice up a jaded genre. Its plot-orientated gameplay, which places it somewhere between a graphical adventure and a conventional 3D blaster, could well appeal to more cerebral shoot 'em up fans.







The ghostly apparitions dotted throughout the game offer clues to the rather basic puzzles





There are no breaks between levels in *Killing Time* – the player just walks into a new area – but the graphics change considerably. However, the architecture never strays far from these boxy corridors and low-ceilinged rooms

Assault Rigs





Electrical barriers flash intermittently (top), allowing you to nip through. One special weapon disguises your tank as a block of that level's scenery (above)

Format:	**PlayStation**
Publisher:	**Psygnosis**
Developer:	**In-house**
Release date:	**November**
Origin:	**UK**

Psygnosis' take on classic tank-based shoot 'em up *Battlezone* adds another title to the Sony-owned company's already impressive PlayStation line-up

With the PlayStation, Psygnosis seems to have finally acquired the technology to match its ambition. In titles like *Shadow Of The Beast*, *Microcosm* and *Novastorm*, gameplay typically took second place to the stunning graphics – which were usually nothing more than fancy backgrounds spooled off CD-ROM. But *Wipeout*, *Destruction Derby* and, now, *Assault Rigs* all appear to have successfully fused the enviable Psygnosis style with good, old-fashioned gameplay.

Atari's *Battlezone* coin-op blazed a trail for 3D tank games, but there has been little innovation since then from the few titles which have tried to emulate its success. Tengen's *Vindicators* was a non-starter, and most computer-based tank battle games have opted for weighty strategy over fine-tuned arcade action. *Assault Rigs* – developed by Psygnosis' Stroud-based coding team – easily outguns its predecessors, adding a multitude of extras to spice up its simple combat.

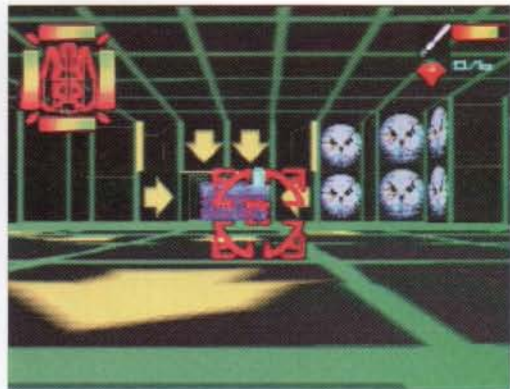
Each of the oneplayer game's 40 levels is littered with red gems, all of which you have to collect to open the exit. The levels consist of chunky 3D areas which are not complex enough to be called mazes but have enough hidden areas to make exploration a factor. Both fixed gun emplacements and roving enemies are dotted throughout each level, and there's a wide variety of highly inventive weapons with which to eliminate them.

Simple weapons such as single-shot guns, bouncing ammunition and shells

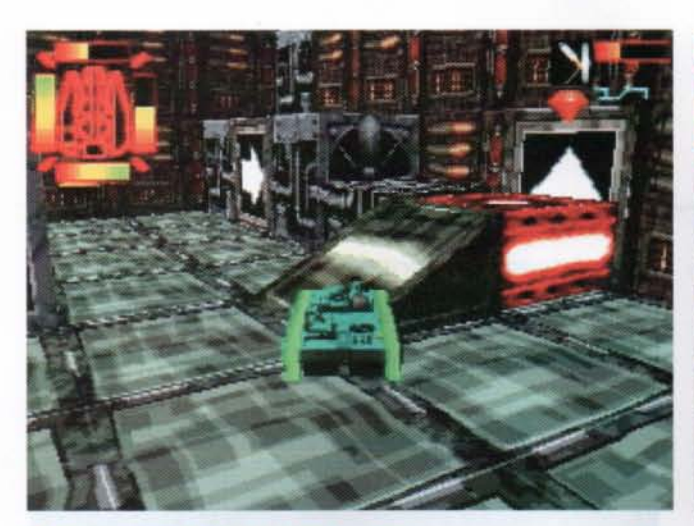


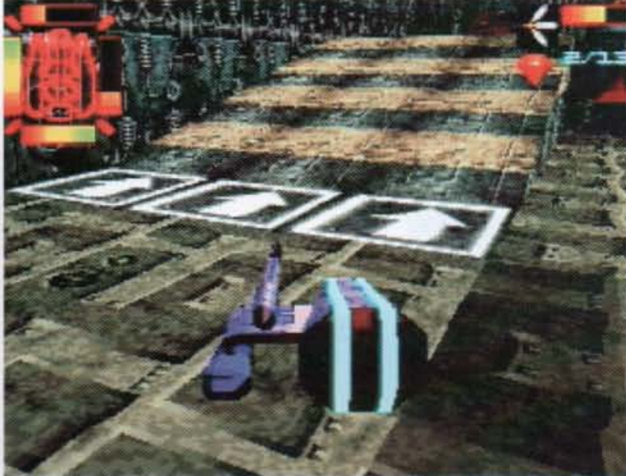
Watch the trail as you loose off a homing missile to take out a gun emplacement





The *Tron* influence is easy to spot in these clean-looking levels. The widest exterior view (above left) lets you see plenty of the surrounding terrain, but the out-of-cockpit view (above right) is tighter and much more claustrophobic









Devices such as lifts make the levels more interesting (top), as does the psychedelic crazy paving pattern (above left). The more basic level designs are rather less inspiring, though (above right)





Collecting red gems is the object of the oneplayer game. Just drive into them to pick them up (above). The speedy light tank (top)

Fire a fly-by-wire missile and you get to guide it right to a target using a firstperson-perspective view (above)

that fragment on impact are supplemented by more advanced hardware, including a rapid-fire mini-gun, a laser, and homing and wire-guided missiles. You can even drop sentry guns which, after a short while, begin firing at anything in range, even your own tank. 'Passive' weapons, like shields and a camouflage device which disguises you as a block of a scenery, are also available.

Visually, *Assault Rigs* mixes techno-heavy tanks and level textures with *Tron*-inspired enemies and satisfyingly retro-looking gunshots. Suitably heavy-handling controls work well with the graphics and give the tanks a convincingly weighty feel. However, at this stage some of the textures still look a bit on the shabby side and, as with many other PlayStation polygoners, 'folding' is evident in places.

A twoplayer link-up option with specially designed levels will also be incorporated, which should add to the game's longevity – as long as you have access to two PlayStations and two copies of the game. *Assault Rigs* is another impressive-looking title from Psygnosis which should help flesh out the company's crucial post-launch release schedule. E





The tank selection screen offers a predictable choice of strength or speed

The D

Format:	**3DO**
Publisher:	**San-Ei Shobo**
Developer:	**Warp**
Release date:	**Out now (Jap)**
Origin:	**Japan**

'Interactive movies' have rarely, if ever, managed to function as playable videogames. Warp's *The D* might be different. Then again, it might not...






***The D*'s graphics are best described as one cut-scene after another. Solve a puzzle and you're rewarded with a beautifully staged scene and a new level**

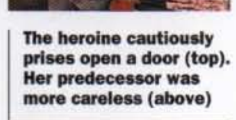
Tokyo-based developer Warp's first 3DO game owes a lot to the groundbreaking, if thinly playable, CD-ROM title *The Seventh Guest*. Both the storyline (a young woman trapped in a mysterious haunted house) and the basic game structure (move joypad and press buttons to trigger new cinematic sequences showing your character's point of view) are reminiscent of Trilobyte's pioneering game.

Where *The D* departs from *The Seventh Guest* is in the imagination behind the cinematic sequences and in the quality of its presentation. *The D* is a classy, atmospheric game, with plenty of original and unusual visuals to keep the player enthralled.

But the gameplay looks like being a different story. There are a few realtime sections, but they're reserved for puzzles and hardly offer the player much freedom. Just two or three options are available per location (at each point the camera stops and waits for another joypad input).

There's no real exploration either. The rooms of the house are divided into areas with only five or six smaller rooms, which means that the puzzles are the only real gameplay element. As in *The Seventh Guest* and *Myst*, there are plenty of logic problems, which are occasionally tricky but which a good search for clues will enable you to solve. There are even some *Dragon's Lair*-style scenes, including a fight with some ghostly suits of armour.

This type of firstperson adventure rarely has anything more than novelty value, but *The D* looks like an impressive effort nonetheless.

The heroine cautiously prises open a door (top). Her predecessor was more careless (above)








Heroine Lola (left) gawps and gasps her way through another ghostly encounter. Above, clockwise from top left: Lola twiddles a number tumbler until it reaches 74 – the figure on a locked door elsewhere. It opens and reveals a ring

Shining Wisdom

Nintendo's *Zelda* is the benchmark for action RPGs. Now Sega's premier designers are trying to capture its spirit for the latest game in a classic series













Although it lacks the kind of pyrotechnics you'd expect from a Saturn game, *Shining Wisdom*'s animation and detailed gameplay should provide some compensation. The SGI-rendered hero, Mars (below)

All the characters in the game modelled in 3D using *SoftImage*, resulting in a total of 10,000 frames of animation

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**Sonic Team**
Release date:	**Out now**
Origin:	**Japan**

The *Shining Force* saga – a series of classy Mega Drive RPGs – is set to continue on the Saturn. At first glance, this new version looks primitive, due to its limited use of colour. However, what can't be conveyed by these screenshots is the sheer amount of animation: all the characters in the game were modelled in 3D using *SoftImage*, resulting in a total of 10,000 frames.

Unlike the previous games, *Shining Wisdom* is an action RPG in the mould of 16bit *Zelda* – in fact, its designers, Sonic Team (responsible for the first Mega Drive *Sonic*), have recently gone on record praising Nintendo's SFC classic. It seems likely that *Shining Wisdom* will embody all the features that make games like *Zelda, Secret Of Mana* and the PC Engine's *Y's* series such fun to play.



As in most action RPGs, collectable items bestow special abilities on the game's hero: a Pegasus helmet enables him to fly, a Power Glove lets him throw enemies, and a Mole Glove allows him to dig. Bizarrely, he'll also be able to transform himself into a monkey and swing from tree to tree.

Japanese text permitting, **Edge** will have a full review of *Shining Wisdom* next issue.

Darkstalkers

After setting the standard for a whole generation of 16bit beat 'em ups with *SFII*, Capcom is unleashing its new-style fighting game on the PlayStation

Format:	**PlayStation**
Publisher:	**Capcom**
Developer:	**Psygnosis**
Release date:	**Autumn**
Origin:	**UK**

***Darkstalkers*' visual style marked a turning point for Capcom. It has now been used in a sequel as well as the *X-Men* and *Street Fighter Alpha* coin-ops**



Each character in the game has its origins in horror stories and occult mythology. J. Talbain (above) is obviously werewolf-inspired

Despite having similar play mechanics to *Super SFII Turbo*, Capcom's *Vampire: The Night Warriors* coin-op – known as *Darkstalkers* in the UK – was an enormous success in Japan. This was largely due to the game's ten fighters – Japanese gamefans delight in lavishly depicted characters, and the range of supernatural beings here were certainly the most charismatic ever seen in a beat 'em up.

Graphically, *Darkstalkers* marked a departure for Capcom, replacing the semi-shaded *SFII* combatants with heavily outlined comic book-style images in flat, bold colours.

However, most of the game's special attacks – including a variety of fireball projectiles and dragon punches – are lifted directly from *SFII*. Other familiar Capcom hallmarks are a combo bonus indicator and a super attack power bar. The range of characters is familiar, too: there's a pair of all-rounders, plus a token female character and a lumbering heavyweight contender.

Although it was ostensibly completed some time ago, the PlayStation conversion – programmed by Psygnosis' Stroud-based development team – has been tossed back and forth between the UK and Capcom in Japan for extensive playtests and subsequent tweaking, including an all-new pre-rendered intro sequence.

The finished game looks like being a remarkably faithful translation of the coin-op. In Japan, at least, it's certain to be one of the biggest PlayStation titles this autumn. E



V-Tennis

Super Tennis creator Tonkin House has produced the PlayStation's first tennis sim. But do the polygons add anything?



Format:	**PlayStation**
Publisher:	**Tonkin House**
Developer:	**In-house**
Release date:	**September 22**
Origin:	**Japan**

Many UK gamers will be familiar with Tonkin House's finest game – probably without knowing it. *Super Tennis*, one of the SNES's four launch titles in Europe, was developed by Tonkin and marketed by the company in Japan. Nintendo, impressed with what is still the best tennis game on any format, then bought it for release in Europe and the US. Now Tonkin is putting the finishing touches to its first PlayStation title, *V-Tennis*, which marks a radical departure from the straightforward *Super Tennis*.

As the 'V' tag implies, this is a 'virtual' polygon-based sim with multiple views and a huge number of frames of character animation. The standard TV-style perspective seen in *Super Tennis* is included, as are a wide variety of other modes which look more spectacular but suffer from a more limited view of the court and a larger, more cumbersome player.

It remains to be seen whether the simple versatility of *Super Tennis* can be translated into three dimensions. If not, *V-Tennis* may well end up as yet another casualty of the switch to polygon graphics. Whatever the case, Tonkin House will face competition from SPS, whose *Ground Stroke Tennis* is set to be released first in Japan.









In terms of the features available, and even in the typefaces used, *V-Tennis* maintains the style of Tonkin's major hit, *Super Tennis*



This traditional camera angle (above) should give *V-Tennis* basic playability

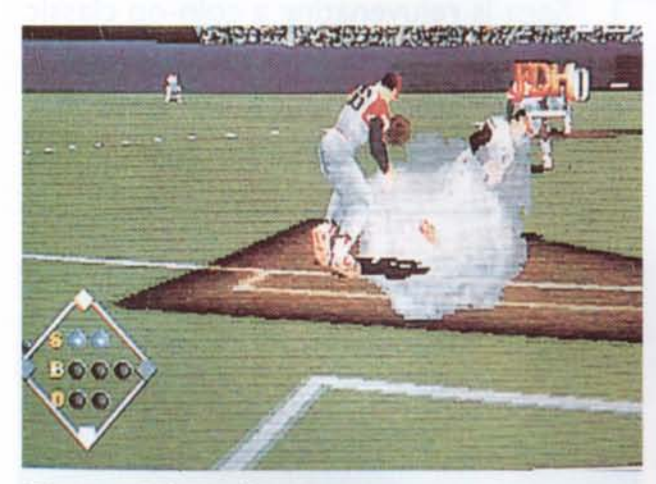




Close-up, the polygon players in *V-Tennis* look good (above). But are the views playable?

Final Arch

Baseball games rarely make much of an impact, but Sega's latest Saturn-powered coin-op is shaping up to be one of the better-looking ones



Slides are realistically animated and accompanied by dust

Format:	Arcade/Saturn
Publisher:	Sega
Developer:	AM1
Release date:	TBA
Origin:	Japan

Sega's attempt to use Saturn technology in a range of arcade machines has borne little fruit so far. Apart from a couple of derivative side-on beat 'em ups and a puzzle game, the company's new baseball sim is the first real evidence of faith in the polygon-handling abilities of the ST-V – an arcade board designed to allow easy porting of software between arcade and Saturn.

Final Arch, which follows a series of popular sprite-based baseball coin-ops released by Sega, is a supremely good-looking game. Given the level of detail, the most remarkable feature is the speed of the action – the camera rotates and zooms exceptionally smoothly at a constant 30 frames per second.

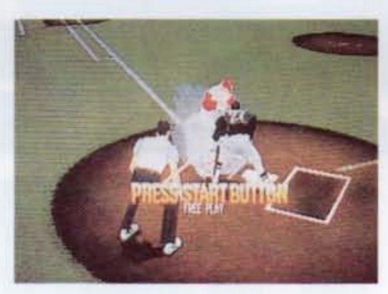
The main concern of Sega's AM1 division (which was also responsible for the Model 2B-powered *Indy 500*) was to make *Final Arch* as realistic as possible. As well as the TV-style presentation and wide range of camera close-ups, there's an impressive range of convincing animation for the motion-captured characters, and each player has 20 different attributes which affect his batting, pitching and fielding techniques.

At this stage, it's unclear whether *Final Arch* will be ported to the Saturn, but it seems unlikely that Sega will waste what could turn out to be a playable and technically advanced version of the sport. E

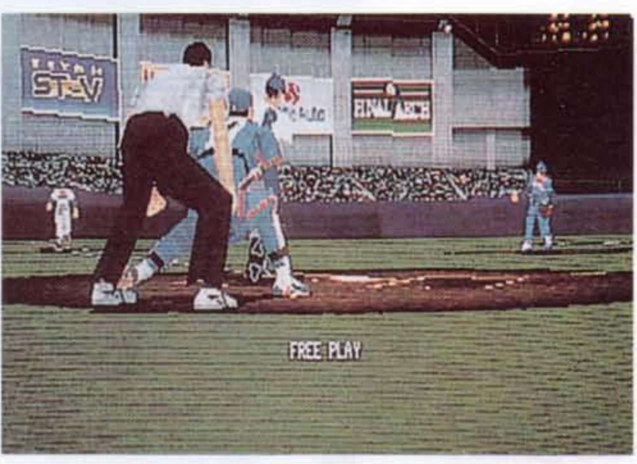




It's possible that Sega's ST-V coin-op won't make the journey to the UK



Each player has 20 different attributes which affect their batting, pitching and fielding techniques



Not only are the polygon graphics well shaded, but the player animation and camera movement are superbly fluid

Hang On GP '95

Sega is rejuvenating a coin-op classic for the Saturn's next racing event. Hopes are high that it will leave the rushed *Daytona USA* for dust...





Sega's improved 3D routines are being called into play for this potentially superb jaunt down memory lane. Hopefully, the level of detail will not be compromised to maintain a silky-smooth frame rate. Two views are available – on-bike (top left, bottom left) and behind (above) – as well as a selection of different machines



***Super Hang On* really propelled Sega into the racing super-league, with the splendid ST and Amiga conversions reinforcing the game's design strengths**

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**In-house**
Release date:	**September**
Origin:	**Japan**

Before *Virtua Racing* and *Daytona USA*, Sega's coin-op supremo Yu Suzuki first made his mark with *Hang On*. Released in arcades in 1985, it proved extremely popular, with a sit-on bike that required the player to physically lean sideways to get round the bends.

But it was *Super Hang On* two years later which really propelled Sega into the racing super-league, with Activision's splendid ST and Amiga conversions only reinforcing the game's design strengths. *Hang On GP '95* is Sega's attempt to rekindle that magic on the Saturn. Using AM2's new graphics library (like Saturn *Sega Rally*), this is one Saturn game that shouldn't suffer from the problems associated with coin-op conversions.

So far, very few details have been released about *Super Hang On '95*, although it's known that two different views will be selectable: a firstperson perspective and an above-and-behind viewpoint. Individual races will allow up to 30 bikes to compete, and it seems likely that Sega's racing controller will be supported.

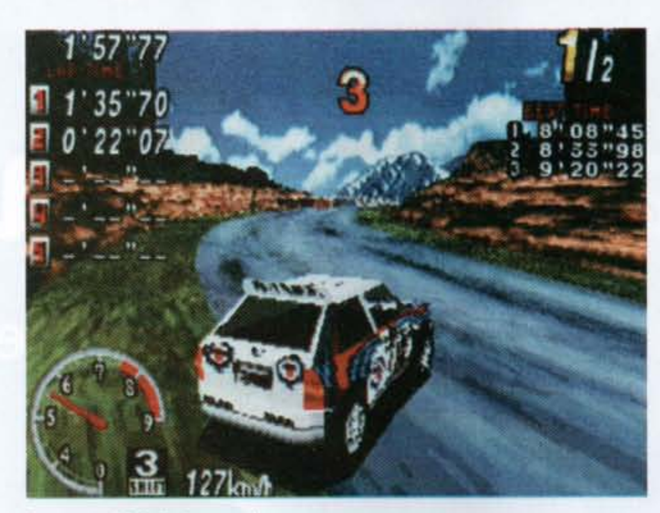
If Sega can blend the ultra-fast pace of *Super Hang On* with the visual appeal of its newer coin-ops, this autumn could be a good time to join the Saturn owners' club.



It's not yet known if *Hang On GP '95* will suffer from the same screen draw problems as *Daytona USA*

Sega Rally

The definitive coin-op off-road racer is Saturn-bound. But will Sega's coders steer clear of the potholes that dented *Daytona USA*'s credibility?



Hopes are high that Saturn *Sega Rally*'s graphics will leave the disappointing *Daytona USA* conversion trailing

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**AM3**
Release date:	**December**
Origin:	**Japan**

There's no denying that AM3 did a marvellous job on the *Sega Rally* coin-op. It's a prime example of what Sega does better than anyone else: design fast, stunning and thoroughly engrossing arcade simulations which combine wonderful graphics and supreme playability.

The Saturn conversion makes its debut at the end of the year, and is being coded with the help of AM2's improved 3D libraries to maximise the number of polygons onscreen and prevent the same degree of scenery 'pop-up' which prompted criticism of the Saturn *Daytona USA* conversion. So far at least, it looks like it will be a more impressive driving experience.

Sega Rally is an example of what Sega does best – design fast, stunning and thoroughly engrossing arcade simulations

Although the graphics clearly have a long way to go to match the coin-op's detail-rich environments, there's still a lot more work to be done. But as with *Daytona USA*, the Japanese press is maintaining that the original game's primary strengths – its control and overall feel – have been admirably replicated. Quite how much the conversion will suffer from the lack of the coin-op's superb reactive steering wheel isn't yet known.

Expect a more comprehensive look at this keenly awaited racer in a future issue of **Edge.**











The in-car perspective (top left) should provide the most exhilarating ride. The Lancia Delta (above right) and Toyota Celica GT-Four (left and above left) are retained for the home version. New features are being added to extend lifespan

Rave Racer

Since its release, Namco's *Ridge Racer* has gained a reputation as a superlative arcade racer. Now it has finally been surpassed – by its sequel



An undulating city streets circuit (above) is one of the two completely new tracks in *Rave Racer*, featuring banked corners and three jumps

Night driving, mountain passes and a narrow, sinuous road conspire to make this a real longterm challenge

Format:	**Arcade**
Manufacturer:	**Namco**
Developer:	**In-house**
Release date:	**Out now**
Origin:	**Japan**

It's now over 18 months since *Ridge Racer* was released in the arcades. *Ridge Racer 2* made a few tweaks to the original game (twoplayer mode, more efficient cars), but it wasn't so much a sequel as an update, and it failed to address the main criticism of the first game: namely, that it only had one track.

Enter *Rave Racer*, which is currently wowing gamers in Namco's new London arcade. Although the basic *Ridge Racer* game engine has been retained, there are now four courses on offer, including the original. The first new track, aimed at beginners, is a city highway with banked corners and three jumps. The intermediate course is based on the original *Ridge Racer* circuit but features new graphics for the bridge and buildings.

The four different courses include two *Ridge Racer* tracks

But it's the expert track that is *Rave Racer*'s star attraction: night driving, mountain passes and a narrow, sinuous road conspire to make this a real longterm challenge.

Namco's System Super 22 board has enabled *Rave Racer*'s programmers to eliminate the slowdown caused by crashes in *Ridge Racer*, but the crashes themselves still fall short of the barrel-rolling standards of *Daytona*. System 22 has also allowed an external view to be added – although, judging by PlayStation *Ridge Racer*, this will probably be of limited usefulness. Other improvements include better sound, smoother shading and higher-resolution texture maps.









Like its predecessor, *Rave Racer* has two views, and again the in-car view is far better suited to play than the behind-car one (above right)

Just as Sega's Model 2B board is revitalising Sega's fortunes, System Super 22 should keep Namco going until its System 23 technology comes onstream next year.

Indy 500

The all-American race formula gets the Model 2 treatment from Sega, but can it match the awesome *Sega Rally*?

Format:	**Arcade**
Manufacturer:	**Sega**
Developer:	**AM1**
Release date:	**Out now (Jap)**
Origin:	**Japan**

Sega's follow-up to its huge – and hugely successful – *Sega Rally* coin-op is another sit-down driving game boasting crowd-pulling texture-mapped graphics. *Indy 500* is based on the American sport of IndyCar, although Sega's AM1 design team has wisely decided to supplement the traditional oval circuits with some less realistic but infinitely more exciting courses.

The rollercoaster-like Highland Raceway is the most improbable track – its vertiginous slopes are about as far from the banked ovals of IndyCar as it's possible to get – but it should give *Indy 500* the spectacular impact any major arcade game needs.

Among the other courses is Bayside Street, a testing city circuit with narrow lanes edged on both sides by walls. This limits the number of passing opportunities and makes it the most technically challenging of all the tracks.

Indy 500 is the latest Sega coin-op to make use of the proven Model 2 board – *Daytona USA*, *Virtua Fighter 2* and *Sega Rally* were all based on the same technology, which bodes well for *Indy 500*. However, reaction to the game in Japan has been relatively muted so far, with Namco's impressive *Rave Racer* (see page 37) attracting a lot more players.





Sega's efforts to create dynamic courses for *Indy 500* don't appear to have impressed Japanese gamers



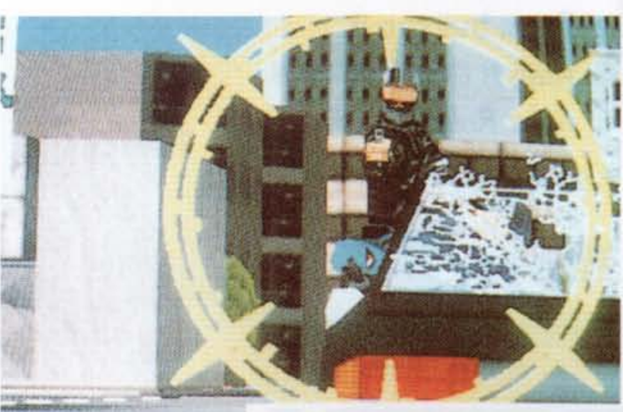


Rolling starts (top) are very IndyCar, as are the many crashes (above)

Virtua Cop 2

The gun game hasn't changed a great deal since *Operation Wolf*. Sega's *Virtua Cop 2* retains the basic gameplay but adds a few visual embellishments

Format:	**Arcade**
Publisher:	**Sega**
Developer:	**AM2**
Release date:	**TBA**
Origin:	**Japan**





Virtua Cop 2 is powered by Sega's Model 2B board, which makes it look superior to its predecessor even if it's no different in terms of gameplay







One level of _Virtua Cop 2_ puts you in a car chase, blasting at criminals leaning out of the cars in front of you

Gun games tend to have a long lifespan in the arcades, with sequels often keeping a series going for years – *Operation Wolf, Lethal Enforcers* and *Mad Dog McCree* all spawned grander, more heavily armoured offspring. With *Virtua Cop 2*, a two-gun coin-op with stylish polygon graphics in the mould of its other *Virtua* titles, Sega is adhering to the same formula.

Virtua Cop was nothing more than a distillation of previous gun games into the attractive *Virtua* house style, and *Virtua Cop 2* features the same magpie approach to games design. On certain levels, for example, there are barrels which, if shot, explode and eliminate all the enemies onscreen – a clearly *Doom*-inspired touch.

Also new are the driving sequences, where you look through the windscreen of a moving vehicle as enemies fire out of car windows and from the backs of trucks – a feature which appeared in *Operation Thunderbolt* and *Lethal Enforcers*. The targeting system remains the same as the original's, as do the three difficulty settings.

Already close to completion, *Virtua Cop 2* should sustain Sega's unmatched coin-op reputation, even if it will have trouble stealing the limelight from *Sega Rally*. E





Like the original game, _Virtua Cop 2_ is a two-lightgun cabinet, which should extend its inevitably short lifespan



Into The Shadows (above), *Vertigo* (below) and *Amok*



Scavenger

Los Angeles developer Scavenger may not be a household name just yet, but it's working on it. **Edge** meets a company with genuine pride in its work





If you've never heard of Scavenger, the chances are that you will do soon, whatever platform you own. Scavenger is a Los Angeles software firm on the verge of joining that elite group of developers which have access to state-of-the-art technology but which also recognise the overriding importance of playability. Its forthcoming range of PC, Saturn, 32X and PlayStation games could well set a new visual standard on their respective machines. But Scavenger is playing down the graphical aspect of its titles, asserting that what really counts is the gameplay.

Into The Shadows is initially the most impressive. It's a PC dungeon game that, with its realistic scenery, breathtaking lighting effects and stunning character animation, could quite easily pass as a pre-rendered graphical demo.

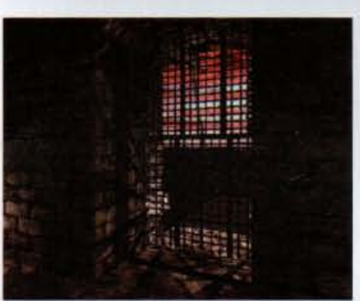
In fact, until fairly recently, it *was* little more than a graphical demo. 'It started off as being a set of technologies for the PC,' recalls managing director **Daniel Small**. 'It wasn't decided that it was going to be a dungeon game until about nine months ago. That's when the programming tools were ready to build content, and only then did we decide what we wanted to do.'

Despite Scavenger's emphasis on gameplay, it's *Into The Shadows*' technical achievements that strike you first. Running fullscreen in SVGA on a high-end Pentium, the 256-colour, true-3D, texture-mapped polygon environment moves at over 25 frames per second and boasts realtime lighting and motion-captured characters.

This graphical sophistication would be impossible without Scavenger's Triton Advanced Physics Engine, which it has been working on for the past two years. It's a result of the company's unconventional approach to technical development. 'We'll pick a specific technology and put a team together to go after it,' explains Small. 'The team picks a name for itself to give it a sense of identity and then sets out after that technology.'

Developing a fast graphics engine was the responsibility of one such team (which includes some of the famous Scandinavian demo coders who pushed the Amiga so hard in its early days). Small sees this modular, co-operative method as the way forward, citing the music industry as an analogy: the individual teams are bands sharing studios, and Scavenger the publisher is the record label.





All of the surfaces in *Into the Shadows* are made up of textured polygons (top). An incandescent sky provides a dramatic backdrop (above). Realtime lighting casts shadows through this portcullis (left)

'You don't get many breakthroughs in 3D lighting. The important thing is who can come up with the tricks to make them work'
Daniel Small

Raw speed in a graphics engine is nothing new, but Scavenger's 3D artists have done the technology justice by designing some stunning environments for *Into The Shadows*. The rooms have a truly epic scale, setting the scene for additional effects and providing an atmospheric foundation for the game itself. And Triton caters for perspective texture mapping, which gives the rooms even more depth.

But arguably more important than Triton is RealLight, Scavenger's realtime 3D lighting routine. 'We know all the algorithms,' claims Small. 'To tell you the truth, most of them are public domain and are readily available anyway – you don't get

Continued next page

Continued

too many breakthroughs in 3D lighting technology on a daily basis. The important thing is who can come up with the tricks to make them work. And we're pushing as far as we can go.'

Into The Shadows is primarily a fighting game – an interesting choice of genre considering all the effort that has gone into the scenery. However, there is a significant exploration element involved – the player has to collect objects and discover secrets as he moves around the castle. And Scavenger has gone to the same lengths to make the combat sections attractive and realistic as it has with the backgrounds. To create the characters' movements, the firm enlisted the help of a Polhemus motion-tracking system, which has had considerable benefits for naturalistic movement – seeing ranks of belligerent skeletons and ghouls marching towards you in SVGA is a jawdropping experience.

Scavenger is determined that none of its games will ever appear on other platforms. Small also insists that the company will never license its engine: 'Half the world is going toward using other people's engines, and only a few people are creating engines and developing technologies. We've been working on most of our technologies for two to three years now. Everybody here wants to make an original. We're not into the porting idea.'

Although *Into The Shadows* will only appear on the PC, both Saturn and 32X owners will have their own innovative and visually outstanding titles. *Vertigo*, a pure 3D racing game running in 32,000 colours at 30fps, is one of a pair of games scheduled to appear on the Saturn this year. Scavenger believes that what distinguishes it from the plethora of other racers is its 3D collision system, combined with fast, varied gameplay. Although collision is a fundamental part of all 3D action games, Scavenger reckons it is ahead of the competition in this area, having taken account of every possible situation to create a truly immersive gameworld.

The other Saturn title is *Amok*. A twoplayer action racing game that initially



'Half the world is going towards using other people's engines, and only a few people are creating engines. Everybody here wants to make an original. We're not into the porting idea'
Daniel Small



Scavenger's 3D artists have excelled themselves (top). Perspective mapping is particularly evident here (above)



Every character in *Into The Shadows* was modelled using a Polhemus motion-capture system, which has had impressive results

looks similar to *Total Eclipse* on the 3DO, it offers a blend of slick graphics and intense splitscreen racing which seems certain to captivate Saturn audiences when it is released later this year. It also boasts landscape-altering algorithms the like of which have only previously been seen in Bullfrog games like *Magic Carpet*.

'For most companies the landscape is static,' observes Small. 'Some firms replace one bitmap with another, but that's just too easy. We have our BSpace algorithm which allows us to affect and permanently alter the gaming environment and create a more involving game.'

Scavenger's Sega background (its internal label Zyrinx developed the hugely playable Mega Drive *Thrust* clone *Sub-Terrania*) is evident in the fact that it is also working on a number of 32X titles. 'The 32X is a great machine,' asserts Small, 'but it just didn't happen.'

Heavy Machinery is a homegrown racing effort, and *X-MEN* will be 'the most beautiful thing you've ever seen', according to Small. Scavenger is just waiting for the finished artwork from Sega before it can



The BSpace algorithm used by Scavenger in *Amok* allows the landscape to be warped according to the player's actions



'We're not going to work with the PlayStation the way everybody else has. Every machine can do something it's not supposed to, and we now feel that we have the tricks to exploit this in the PlayStation'
Daniel Small

Amok's twoplayer mode is what Saturn owners will be looking forward to. The head-to-head action can get pretty hectic



Amok boasts a wide variety of enemies. Like the scenery, they have a tendency to pixellate when very close to the camera



complete the game, but it claims that it has attracted one of Sega's biggest ever spends, with the Japanese company lavishing $2.2 million on the dual-platform development.

Although Scavenger doesn't yet possess any development PlayStations, it has been actively preparing for the arrival of Sony's much-heralded machine on the market. 'We're not going to work with the PlayStation the way everybody else has,' claims Small. 'We're going for NURB-based development which will allow us to create faster and more complex characters using hundreds of polygons rather than bitmaps. Every machine can do something it's not supposed to, and we now feel that we have the tricks to exploit this in the PlayStation.'

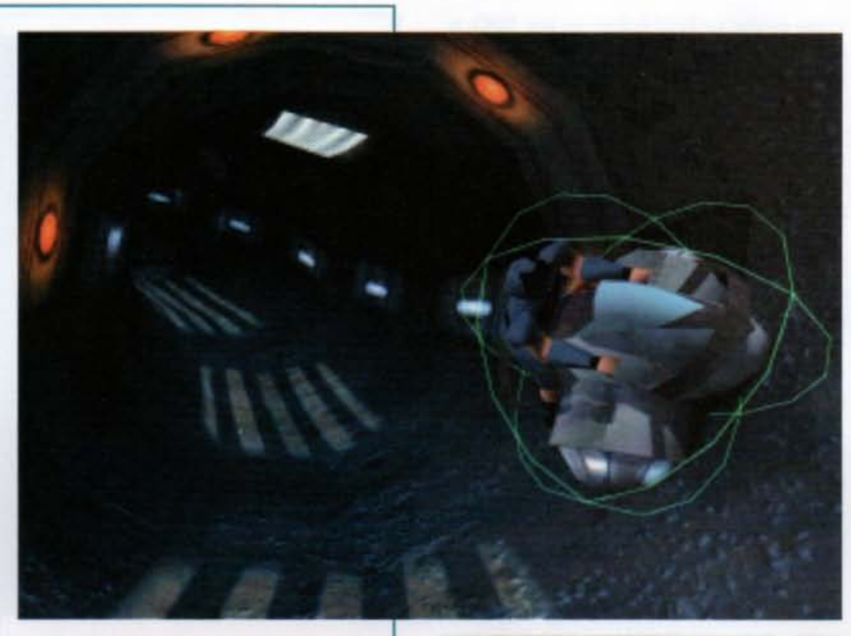
Continued next page

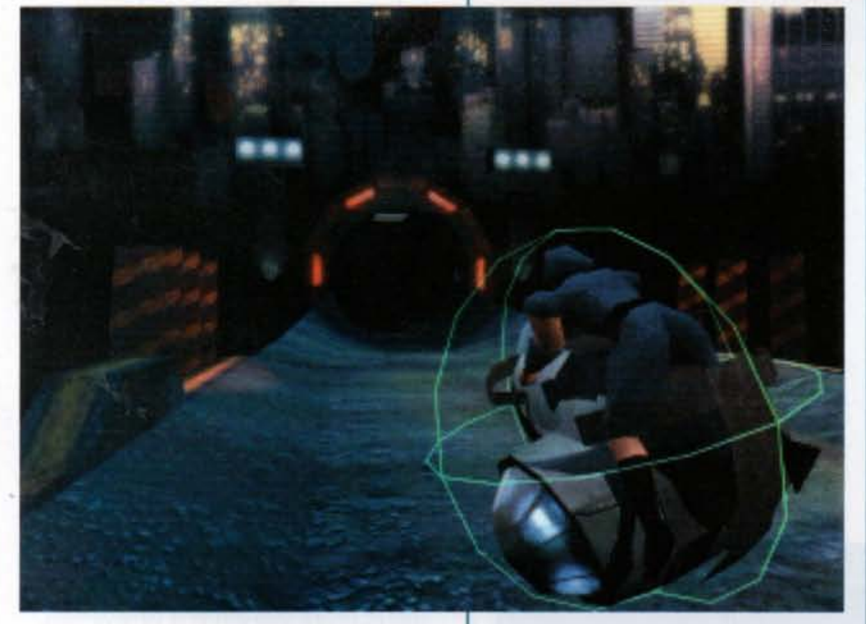
Continued

Although this smacks of hubris, the technical ability Scavenger has shown on other formats it has been closely involved with indicates that it's not an idle boast. 'All the machines are the same to us,' shrugs Small. 'It's just a question of what game you're going to build. If Nintendo ever give us something, we'll work on that too.'

Scavenger's philosophy often seems at odds with that of other 'next generation' developers, many of whom appear to have taken an oath of allegiance to non-interaction, concentrating on pre-rendered graphics and FMV rather than genuine gameplay. 'We're basically taking the 8bit games and making them 32bit. That's all we're doing,' claims Small.

He points out that there are currently over 400 titles in development for the PlayStation. 'For publishers it's quantity, quantity, quantity. [But] just because you can write a 3D display routine doesn't mean you can make a 3D game.'





With their 32,000 colours, you'll often find yourself admiring the spectacular backdrops in *Vertigo*. Belting toward a tunnel (above)



Blast through the inside of a torus at 30fps in *Vertigo* (top). *Heavy Machinery* is one of Scavenger's two 32X titles (above)

What is worrying for a relatively small company like Scavenger is that, although it now publishes its own titles, if it comes to an all-out marketing battle against the big boys, its games could quite easily disappear without trace.

But despite that risk, the company is determined not to be seduced into creating more commercial, glitzier and shallower games. Its coders are agreed that it's the quality of the product that counts, not the bottom line on the balance sheet. 'Most of us care very little about our sales,' says Small. 'As long as our friends and everyone in the development community goes, "That's cool!", we're happy.'

Although that attitude may seem somewhat naive, it's refreshing in this era of hard-nosed commercialism to see a company that genuinely cares about its products. Scavenger has not only produced some of the most advanced technology available in the videogames world today, but it is also committed to producing fast, playable games.

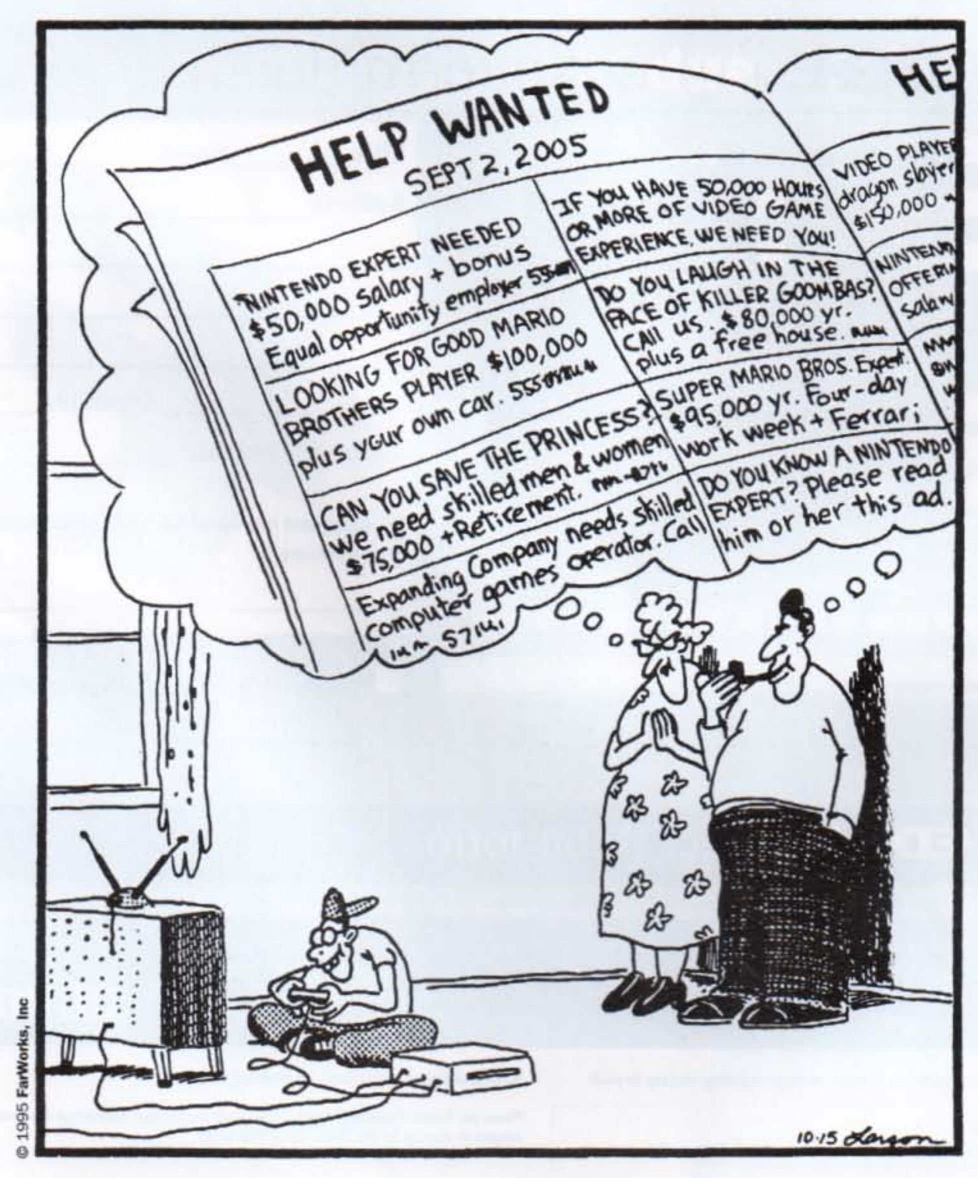
Daniel Small signs off: 'There are people in this office for 24 hours a day, seven days a week. It's a lifestyle. This isn't a job. It's in people. It's their life. You don't do this kind of work if it's not your life. We were fighting to play *Vertigo* this weekend.'

It's this level of dedication to its craft which makes Scavenger definitely a company worth watching.

'There are people in this office for 24 hours a day, seven days a week. It's a lifestyle. This isn't a job. It's in people. It's their life. You don't do this kind of work if it's not your life'

Daniel Small

The **job** game



Hopeful parents

High flyers:
careers in the games industry

For many gamefans, the prospect of actually being a part of the interactive entertainment industry is an incredibly seductive one. But what does it take to fulfil that dream? **Edge** goes behind the job advertisements to find out how videogames recruitment works



The videogames industry is going through a boom time at the moment. And, as you might expect in any thriving field, this means that there's a wealth of employment opportunities available. But, despite the plethora of recruitment ads which appear in magazines such as **Edge**, anyone trying to get a job in the games industry for the first time will discover that it's more difficult than it seems. According to market forces, people are a scarce commodity. But if this is the case, why is it so hard to break in? Has the games industry become a closed shop resulting in companies spending most of their time poaching talent from each other?

The games industry is in fact currently in the grip of a skills crisis. This begs two questions: how did this situation come to pass; and how does someone who wants to work in the field make the most of it? The state of the games industry today is derived from a set of circumstances that have arisen in the last decade. This not only owes a great deal to the influence of big business and big money but is also largely a result of the games industry's own success.

The games industry was built on the backs of enthusiasts. People like Jeff Minter, Jez San and David Braben owned their own equipment, worked from home, taught themselves the skills they needed to write games, and published for straight royalty payments. At that time, development was still crude and small-scale, but many of today's big-name developers grew out of this period, raising the capital to set up full-time from payments for completed games.

This spurt of growth was due to two reasons. First, compared with other industries – for example, the film industry, which is

> **The industry was built on the backs of enthusiasts who worked from home, taught themselves the skills they needed and published for straight royalty payments**

similar in many respects – the games industry had very few production overheads. The cost of paying the wages of an extra programmer would hardly go far towards the expense of location or studio shooting. But despite

Continued over page

The **job** game

these low overheads, the returns were considerable.

The second reason was the boom in the medium itself. Cheap home computers, the attractiveness and playability of many of the early games, and support from new hardware, all fuelled by the increased level of games product available, served to increase consumer demand.

A key factor affecting the job market is restricted supply. The accelerated expansion of the games industry does not allow a breathing space to train new people

The result was a games industry gold rush, which continues today. In the last five years, companies like Philips, Time Warner, BMG and Sony have realised that if they want a slice of the lucrative interactive entertainment industry pie, they should act sooner rather than later – if they wait even a few years, it could be too late. These big players saw the opportunity to come in on the ground floor of that very rare thing, a new sector of the entertainment industry. All had the cash and the political will to do so, and all were spurred on by the potential for big profits and the fear that if they didn't seize the opportunity, their rivals would.

What these multinational firms had in common were deep pockets. The result was a huge influx of capital into the industry. This cash has created a bonanza for smaller development companies – in the same way that, say, a car factory provides a livelihood for hundreds of ancillary component manufacturers. And as these developers grow, they need more staff. This is the artificially inflated market that today's jobhunters find themselves in.

But there's another key factor affecting the recruitment market, and that's restricted supply. Videogames development is being asked to mature from a relatively small-scale industry into a global, capital-intensive one. As the people who joined at the beginning naturally move up the hierarchy, there simply aren't enough of the right people to take their place. Instead, programmers with one project under their belt become project leaders, project leaders become development managers, and people with no experience in the industry at all are hired to make up the numbers. One thing that the accelerated expansion of the games industry does not allow is any breathing space to train new people.

Faced with the opportunity of pulling a big contract, many companies find themselves in the position of having to hire a large number of people just to be able to perform the necessary work for that specific contract. In the recent past, both Rare and Psygnosis, for example, have been faced with this problem. If big names like Nintendo and Sony are lining up at your door to sign deals, it's hard to turn them away solely because the company isn't large enough to take on the contract. Whether it's advisable or not, many companies enter into 'hiring frenzies' whereby its not unusual for them to double in size in the space of 12 months.

Given this situation, it's not difficult to see where the demand for skills comes from, and it means that there are some unbeatable opportunities if you know where to look. Companies embarking on a financed expansion desperately need people, and they need them as soon as possible to start fulfilling the contracts that are available. Therefore, if you have experience in the industry already, you are a rare and increasingly valuable commodity, and are in sufficient demand for

CASE STUDY **1**

Serge Plagnol

Job: Producer/lead programmer

Company: Adeline Software



My first encounter with a computer was at age ten. My parents' friends had a TRS-80, and it took me two days to copy a *Star Trek* program in BASIC out of a magazine. When I tried running it, it crashed. According to my parents' friend, it was the buggiest BASIC program ever. The game was boring anyway. But at the end of two weeks I knew how to program basic things.

The next year I bought a Sinclair ZX81. I haven't stopped programming since. When I was 14, I met Frédéric Raynal at his father's computer store. We soon became good friends and I started skipping classes to go to his 'office' in the attic of his father's store, which was full of all kinds of computers. We spent our lives on those machines.

After graduating from school, I did two years of maths and physics before joining INSA Toulouse, a French engineering school, for three years. There I specialised in industrial data processing. I met up with Frédéric again for the summer (he was at Infogrames then) and worked on the end of *Alone In The Dark*, writing sound drivers. After my second year I joined Frederic again, but this time at Adeline. We then worked on *Little Big Adventure*, and I took care of the sound effects again.

For my last year, I went to the University Of Surrey to do an MSc in Signal Processing And Machine Intelligence. In December 1993 I started to work part-time for Adeline. In June 1993 I graduated from both INSA and Surrey University and joined Adeline full-time, still working mainly on sound for *Little Big Adventure*. I am now producer and lead programmer on one of Adeline's two new games, called *Time Commando*. Today, aged 24 and after 14 years, I still love programming as much as I did that first time in 1980.

CASE STUDY **2**

Julian Rignall

Job: Director of design and product acquisition

Company: Virgin IE



In the mid '80s I'd become a bit of a hero at my local arcade. When I won the 1983 Computer And Video Games Arcade Championship, I knew I wanted to get into the games industry, but didn't have a clue how. Things were looking grim when, thanks to all the time I had spent practising videogames when I should have been in school, I ended up on the dole. I wrote a load of playing tips and sent them off to different magazines. A few months later I joined publishing company Newsfield, which was starting up a C64 equivalent of *Crash* called *ZZAP! 64*. I worked at *ZZAP! 64* for a couple of years before moving on to EMAP, where I worked on *Computer & Video Games* and launched *Mean Machines*, *Nintendo Magazine System* and *Sega Magazine*, among other things.

At the start of 1994, I joined Virgin Interactive Entertainment in the US and became director of design and product acquisition. This means evaluating all new products submitted to VIE, as well as assessing all products in development. If I didn't have ten years' experience in the industry and hadn't reviewed thousands of games, I certainly wouldn't be able to do this job.

If you want to get into the industry, the thing to remember is that, even if qualifications aren't strictly necessary (although they do show that you've got a brain), raw talent and a very high degree of enthusiasm are. You really have to want to work in the games, business, because getting in is very hard work. The software industry doesn't owe you a living, and nobody will employ you unless you've got something to offer.

Start by contacting the right people. QA managers are a good place to begin. These guys are responsible for running a company's test department, and they often have positions for product testers. It's ground-level stuff, but, especially if you have no qualifications, it's a great entry position. Acquisitions managers, magazine editors, lead designers, art directors, heads of animation and chief programmers are also well worth contacting, depending on what job you actually want to do. Get together your very best designs/reviews/demos/art/ whatever and send them off. Don't forget: the better the quality of the materials you're submitting, the greater your chances of being noticed. There's nothing more offputting than a badly written, misspelled document with coffee stains on it. The ideas it contains may be sound, but it gives the impression that you're lazy and unprofessional. Ideas that look good and sound good will get people interested in you.

If you're lucky enough to get feedback from people, accept it gracefully. You might not agree with what you hear, but don't forget that you're talking to someone with experience. They know stuff you don't, so listen to what they're saying and think about it. And finally, don't get put off by failure. Just because one company can't see that you're the Next Big Thing doesn't mean that others won't welcome you with open arms. As I said, you have to work hard to get a lucky break.

companies to start bidding for your services. The result is huge salaries and a raft of perks like share options and the like.

Paradoxically, new companies tend to pay higher salaries for key people than established ones. Former employees of some of the more established software houses often find that the reputation associated with their position, and the experience they've gained there, allows them to take advantage of the vast investment possibilities on offer to set up a company of their own, or to take on business partners to do so. Naturally their investors insist that the company they are financing should only strive for excellence. It's the rallying cry of many of these start-ups that they will hire only the best people, and only produce the best games. Indeed, if you plan to set up a games company, that's the only way you can go about it.

The problem then is that, flush with investors' cash, the new company has to fulfil its promise and hire top-flight staff. Convincing these people to take a risk on an unproven firm obviously requires, among other things, a lot of money. This is why some of the highest salaries you'll see in advertisements are from companies you might never have even heard of before.

Incidentally, not all recruitment advertisements refer to specific positions, or even specific companies. They're often placed by recruitment agencies, who simply offer general jobs and ballpark figures as a means of getting into contact with potential employees. When applying to an agency, therefore, you may well find that the job offered is not what you had in mind at all.

But even so, the cards are stacked heavily in your favour. If you have industry experience, work for a good company, and are willing to take the risk of making a lateral move, it's a jobseeker's market. You've got the opportunity to earn large sums of money and achieve high status in a much shorter time than you could in other, older industries.

> **The cards are stacked in your favour. If you have experience, work for a good company and are willing to risk making a lateral move, it's a jobseeker's market**

If you're not in the industry already but are trying to break in, the story is somewhat different. In

The **job** game

that case, you're competing with a much larger employment market, one that hasn't felt the effects of the boom. The demand for new people without previous experience is there, but there is also a plentiful supply to meet that demand. Unless you have some related non-industry experience, you'll find it very difficult get that initial break. This seems to back up the commonly held view that you're fighting against a closed shop. But this isn't necessarily the case. The opportunities can be grasped if the pitch is made at the right level. If you want to get into the industry, you can, and if you do so now you may very soon find yourself in a position of experience and authority, in a field that seems to just keep on growing.

Although the industry is geared towards the people with the skills and experience now, the growth in the labour market means that the number of positions available cannot solely be filled by the people already there. Companies have to look for new people, which is obviously to your advantage if you're looking for a first job. However, what stands in your way is the fact that the games industry is a very attractive field to work in, and there's no shortage of people willing to move into it, either straight from university or from other sectors such as design or software engineering. Companies can therefore afford to be selective.

CASE STUDY **3**

Dave Perry

Job: Company president

Company: Shiny Entertainment



I started in school writing for videogame books before WH Smith started to stock ZX81 games. These books earned me around $50 per program listing, and for each book I would earn around $600. Finally I was offered my own book, which made me around $15,000. I dumped school and took a job a Mikro Gen for a whopping $5000 per year. This lasted for one year, after which I had a raise to $18,000. Finally I left for Probe, at $50,000 a year. From then on your salary rises according to the quality of the games you produce (it can easily go down too). Nowadays, a games programmer earns between $50,000-$150,000, depending upon experience.

At Mikro Gen I worked with a very talented programmer called Chris Hinsley (of Taos fame), who taught me the ways of assembly language and good game structure. That is my advice: start under somebody's wing, accept any salary offered, and if anything rubs off you will be well on your way in no time.

How do you get your foot in the door? Get a crappy old PC, a shareware *C* compiler, a maths degree and impress me with a demo (no, not a game, a 3D demo, maybe a car rotating or something). Invest some time, buy some books, and the doors will swing open. But it's not easy or everybody would be doing it.

The games industry is a very attractive field to work in, and there's no shortage of people willing to move into it. Companies can therefore afford to be selective

On the surface, many firms require very high qualifications before they'll even consider you for a job. There are two ways to tackle this hurdle: either you can ensure you meet these requirements, or you can offer the company something that makes up for the deficit between your paper qualifications and their needs.

The first approach is obviously sounder, and there are a number of training options you can take. Art colleges are becoming wise to the impact of packages such as Alias, Wavefront and Softlmage on design. Many courses offer experience in these packages, and some even provide modules solely devoted to 3D modelling and animation. But even without these packages, a straight design degree often holds a lot of clout, especially if it's commercially oriented (you'd have a job getting the right training on a fine art course).

On the technical side, almost every university now offers some form of software design qualification. A few universities have even mooted setting up courses in computer games, but so far nothing concrete has happened. In choosing a degree, therefore, there are no extra things you should look for that any decent careers officer couldn't make you aware of.

If you are already on a software degree course, however, there are a number of topics you can make sure you cover. Programming methodology is one, and training in software design principles another. Both of these, although rarely a requirement now, will certainly become more important as the next-generation machines come on-line and as team sizes continue to grow. Similarly, any practical group project will be of interest. Graphics courses are important but tend not to go into anything in great depth, so evidence that you have pursued this topic further will serve you well.

None of this will be of much use if you aren't on a degree course, or if you don't have a degree. In this case, you should remember one thing: whatever a company's stated requirements, never give up if you don't meet them. There are always ways around them.

Many of the first games designers did not have a formal qualification when they started to write games, because, quite simply, they didn't need them. These

people are now the ones in charge. As the industry matures, it's trying to move into line with other industries, which means becoming more professional and consequently more set in its ways. Having learned that good programming practice benefits the software life cycle in terms of time and resources, these companies are buying proper training – although, to their credit, they recognise that there is still a place for the self-taught designer.

But it is harder to get a job without qualifications, and to do so you have to be prepared to put in the extra effort required. Most important is enthusiasm: enthusiasm for the industry, for the product, for the work itself. As Codemasters' **Andrew Graham** points out: 'Companies will always want people who have always enjoyed playing games.' (Although, significantly, he adds, 'If you have the opportunity, you should also take a degree, as qualifications are becoming more important.')

If you attend an interview and solemnly sit talking about how your course helped promote ADA awareness, you'll win few friends. If, on the other hand, you start waving your arms in the air as you try to explain what it is you love about your favourite game, you're onto a winner. The industry is still populated by enthusiasts, and enthusiasts still like to talk to other enthusiasts, so if you jump up in the middle of your interview and start writing on a whiteboard what it was you were trying to explain, you're more likely to impress people.

But although enthusiasm is the first thing you should try to get across, it isn't in itself enough. Further evidence of your commitment to games is also usually needed. The clearest indication of this is that you've pursued your particular craft on your own initiative. 'We're looking for people who have been keen enough to attempt programming or art in their own time,' reveals **Dave Jones**, creator of *Lemmings* and managing director of DMA Design. 'Take a small project onboard. Programmers should be dabbling on their own machine, producing little graphical demos and utilities. Artists should have a demo tape containing some bitmap work or 3D animations.'

Indeed, if you intend to become a graphics artist, an impressive portfolio will do more to win you a job than any qualification or interview technique. Likewise, if you come in

If you have no qualifications, you have to be prepared to put in the extra effort required. Most important is enthusiasm – the industry is still populated by enthusiasts

with a demo disk you've written (a conversion of some old favourite such as *Boulder Dash* is always a good start, but it doesn't need to be so complex), the evidence that you're willing to put in all sorts of hours writing games just because you love to do so will be obvious. For music, a demo tape and a knowledge of recording practices are often enough.

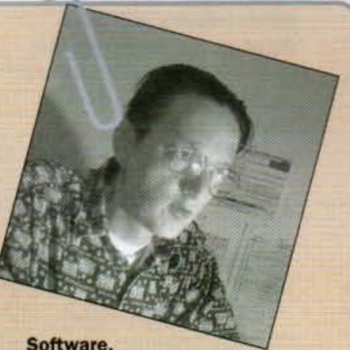
What games companies are looking for in candidates isn't necessarily highly qualified people. When applying for a games job, you might think it obvious to include some reference to games in your CV, but it is amazing how few people actually do so. Having a good knowledge of the industry is also rare enough to make a potential employer pay attention. When a company is hiring from outside the industry – which usually happens if it is expanding rapidly and can't spend time looking only for experienced people – the calibre of candidates is usually high. But a lot of these people are just looking for any suitable job in their field, saw the ad for games design, and thought it might be worth a try. If these candidates included an enthusiastic, knowledgeable but unqualified person who loved games and the industry as a whole, it's not too hard to see whom the interviewers would rather work with. Remember that in all but the largest companies, it is usually a senior member of the creative staff who takes the interview, and

CASE STUDY **4**

Christian Robert

Job: Graphic artist

Company: Amazing Studio



After graduating from school, I spent two years at an art school in Paris (Academie Charpentier), where I learned the basic principles of drawing, composition and colour. Because I didn't know what to do when I finished that, I lazed around for a while.

I spent a few years doing nothing special, and then I started work in the advertising industry as a graphic artist. It lasted a few years, but it was not really my cup of tea. One day I bought a computer – an Amiga 500, incidentally – and I discovered a completely new approach to graphics that made me very enthusiastic.

I decided to do some 2D animation – it was new to me – just for fun. One day I replied to a job ad and sent a floppy disk of my work to Delphine Software, just on the off-chance. And that's how I became a graphic artist in the videogames industry. My natural drawing abilities pushed me in the direction of designing characters and backgrounds. My designs are first implemented on paper, and can then be realised in either 2D or 3D. But my preference remains 2D.

I have been doing this job for five years now, and have spent three years of that time working on *Heart Of Darkness* with the Amazing Studio gang.

Continued next page

The **job** game

there's a good chance that you'll end up working alongside them. Getting a job in the industry isn't just a numbers and qualifications game – or not yet, anyway.

There are a few other things to consider in an interview situation. Many games companies have had little experience in selecting staff, and so a number of dubious practices have sprung up. These may include recognised IQ tests at best to remembering Bresenham's line-draw algorithm or the name of 'that green character in *Street Fighter II*' at worst. Never get disheartened in an interview if you seem to fail these tests; they are often arbitrary hurdles put down by people whose job isn't to select new employees but to design games, and these same people are not usually hung up on one selection technique or another.

If anyone is willing to reject a good candidate on the basis that they failed a memory test, maybe it's time for them to review their procedures – and you can tell them so. Making your point clearly and reasonably are traits that are required in any good design team, and either way it will certainly be better than just keeping quiet on the assumption that you've ruined the whole interview.

In short, if you want to be in the industry badly enough, and if you know you can do the job, then getting in is all just a matter of making the interviewers understand that too. It's not the case that, without the correct qualifications, you're not even in with a chance. You do have a chance, and you have to keep at it until it pays off.

The recruitment agencies' view



Stephen Lloyd-Davies is general manager of Aardvark Swift (01709 571441), a leading recruitment agency for interactive entertainment.

'The "closed shop" syndrome is primarily a consequence of an industry driven by deadlines. Candidates are pre-selected by their ability to be immediately productive – hence the overriding emphasis on the need for experience.

'To anyone contemplating entering the industry, our advice would be to do it sooner rather than later. In fact, do it now – there's never been a better time! There is an unprecedented demand for staff, especially programmers. A combination of acute shortage and very high demand is driving salary levels on an upward spiral. While much of the demand in the system is artificially induced, the marketing activities of the large multinational games companies will ensure it becomes more consumer driven. The domestic skill shortage is exacerbated by additional external pressures. The UK's ongoing success in producing quality, innovative games has provided a focus for attention, not only for the product itself but also for its creators. Both individuals and groups are increasingly being targeted and approached by organisations based outside the UK, especially the West Coast of the USA, which is proving an irresistible temptation for many.

'But while the rewards can be exceptionally high, it's important that potential entrants don't approach the games industry with rose-tinted spectacles or regard it as an easy option. The leisure software sector is infinitely more interesting and stimulating than working within traditional business application areas of IT, but it requires hard work, dedication and an ability to work well under pressure.

'The competition for staff is now fierce. The market moves extremely quickly, and there is an undeniably strong correlation between successful recruitment and speed of response. Any manager who allows a good CV to sit in his in-tray for more than a week may as well use it as a paper aeroplane. An experienced programmer is usually off the market in around ten days, usually with multiple job offers.'

Paul Rose works for Prospect Management Services (0171 439 1919), which has focused on the multimedia industry for the last six years.

'With technology evolving so rapidly, finding development staff with a wealth of relevant experience is becoming more and more difficult. Ten years ago, superstars were writing games in their bedrooms on computers that they would have been given as birthday presents. These days, such presents would prove expensive, with development kits running into hundreds of thousands of pounds.

'However, those people working in the industry on titles for next-generation machines truly have the world at their fingertips. Their experience is rare, and so companies want to tap into that resource before the competition does. Companies know that they need to be able to tempt this talent over to their camp, and that is why the salaries quoted in advertisements often seem too good to be true.

'The problem is that there are too many companies chasing only the experienced people; too many unprepared to take a risk and invest in training talented newcomers. The situation may arise when only the traditional media companies will have the resources to suck up the available talent, at the expense of the smaller and arguably more creative ones. Furthermore, there will be no incentive for smaller companies to develop talent. And without a healthy independent sector, UK Games Industry plc will suffer.

'Therefore, the industry needs some UK-wide initiative to prevent this happening. It is in everybody's interest to have a thriving UK games industry, developing young talent and bringing in talent from related sectors like television/commercials, and the recording industry, where the UK is already a world leader.'

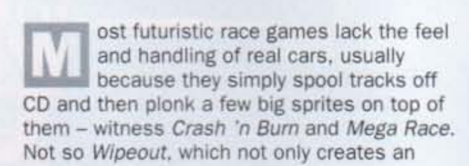
Wipeout

Format: PlayStation
Publisher: Psygnosis
Developer: In-house
Price: £TBA
Release: Late Sept





Tunnels, canyons and rollercoaster-like turns help to make *Wipeout* quite the most impressive graphics showcase yet for Sony's PlayStation



Most futuristic race games lack the feel and handling of real cars, usually because they simply spool tracks off CD and then plonk a few big sprites on top of them – witness *Crash 'n Burn* and *Mega Race*. Not so *Wipeout*, which not only creates an exhilarating, realistic sensation of speed but serves up the most impressive graphics yet seen on the PlayStation.

There are six basic tracks, which get progressively harder, introducing sharper corners and complexes of bends. When you've completed those, you can start on the six 'Rapier-class' tracks – night-time versions of the basic six which are around twice as fast and noticeably tougher. The course design is wonderfully imaginative, with features like huge drop-offs where the track disappears from under you and you glide through the air before bumping down again.

There's a standard selection of themed locations – forests, canyons, an industrial cityscape – but all are highly atmospheric



The six basic 'Venom' courses in *Wipeout* (clockwise from top left): a tunnel in Altima VII; the canyons of Karbonis 5; Terramax; the industrial Horodera; the desert stage, Arridos IV; and snowbound Silverstream













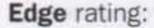
Wipeout **is playable from both the behind-ship view (top left) and the in-cockpit view (top right), which banks sharply and flips on impact with the sides of the track. The dramatic canyons of the Arridos IV track (above and right)**

andw ell-detailed. The monumental scale of the trackside barriers and surrounding scenery not only serves to mask the limited horizon drawn by the PlayStation but also forces the player to be constantly alert, adjusting the ships' path and thinking one corner ahead.

A lot of care has been lavished on the handling and controls of the different ships. Flying on a cushion of air above the surface of the track, the craft bob up and down convincingly, feeling satisfyingly weighty yet responding well to the gentle nudging required on the first couple of tracks. Move on to the later, more difficult courses and the tight corners require deft use of the twin air brakes.

In a nod to the seminal *Super Mario Kart*, markings over the different tracks provide one-shot power-ups which can be used to gain valuable ground on the seven other intelligent computer opponents in each race. In addition, arrows on the track surface act as speed-ups – and on all but the first tracks it's vital to hit them if you hope to finish in the top three and qualify for the next race.

A soundtrack featuring tunes by Leftfield, The Chemical Brothers and Orbital augments this thrilling arcade experience, as does the two-machine link-up game. The simplistic championship structure and reliance on track-based power-ups limits *Wipeout*'s lifespan, but it's hard to criticise such a beautifully realised and well-produced game which exploits the PlayStation's power so well. E



Edge rating: **Eight** out of **ten**



Each of the many jumps in *Wipeout* is patrolled by a small ship (above) which grabs your craft with a tractor beam should it fail to get across or veer too far off-course





The range of blues and whites on the Silverstream level creates a convincing snowscape (above left). Gigantic trackside advertising hoardings help flesh out the science-fiction scenario (above right)

J-League Winning Eleven

Format:	PlayStation
Publisher:	Konami
Developer:	In-house
Price:	¥5800 (£45)
Release:	Out now (Japan)







Fourteen major J-League teams are included (top). Names and faces of players appear onscreen to show which ones you and your opponent are controlling (above)

With pre-orders for 120,000 copies in Japan, the first polygon-based football game for the PlayStation certainly has a lot of expectation to live up to.

Unlike many of its soon-to-be rivals, *J-League Winning Eleven* is fairly restrained in its camera dynamics, with only three different views. There's a close-in perspective which follows the man on the ball but is fairly unplayable; and a wider, low-down view which, again, is too narrow to be really practical.

Thankfully, there's also a wider side-on, TV-style view which doesn't compromise the gameplay and shows off Konami's smooth-playing arcade mechanics rather than the strangely pointy graphics. The excellent control system uses the main buttons of the pad for different kicks, barges and tackles and the bottom shoulder buttons for aftertouch.

The moves, particularly dribbling, passing and shooting, soon become instinctive, leaving you to concentrate on tactics and scoring – goals are typically spectacular blasts from yards outside the box. The action has a kickabout feel, but it's more sophisticated than in most previous Japanese football games and much more enjoyable. Matches always seem unpredictable, with new animations cropping up regularly and miskicks, fluffed saves and deflections mixing things up. Many football games fall down because there are only a few possible ways of scoring goals, but in *Winning Eleven* a huge variety of goal-scoring techniques rewards experimentation and keeps games fresh.

J-League Winning Eleven's angular, part-textured players may look rudimentary compared to other PlayStation football titles in the works, but all those games will have trouble matching the easy-going playability that distinguishes Konami's latest PlayStation effort.



Replays are shown automatically after each goal from one of several angles (above and left)



The polygon players look best close in (inset) but the game plays better wide out (above)

Edge rating: **Seven** out of **ten**

Command & Conquer

Format:	PC
Publisher:	Virgin
Developer:	Westwood Studios
Price:	£45
Release:	Late Sept





Pre-rendered sequences are employed to update the story between each mission and provide a briefing for the next (top). Tanks rumble across the desert (bottom), and it's your task to stop them



Constructing buildings quickly and defending your Tiberium harvester is vital to your success

Some games have everything in their favour yet ultimately fail to live up to expectations. *Command & Conquer* has been lavished with pre-launch publicity, marketing hype and 90 per cent-plus review scores from various games magazines. So it's regrettable that it's an only slightly improved version of a previous Westwood Studio game, the excellent *Dune 2*, which appeared over three years ago.

C&C's principal problem is the all too familiar curse of CD-ROM. The CD's huge storage capacity has lured Westwood into adding megabytes of extraneous story-development video footage, cut-scenes and tactical development information. Although they're among the best examples of their kind (they're even a match for those in *Wing Commander 3*), the fact is you never actually play them. So, after a brief 'isn't that nice', it's back to the game, where the paucity of innovation soon becomes evident.



Capturing enemy fortifications with engineers is an ideal way to gain ground quickly. The red Tiberium factory (above) has been captured, leaving you vulnerable to counter-attacks

Basically, it's all been seen before. Those familiar with *Dune 2* will remember constructing factories and sending troops off into uncharted enemy terrain to fight and capture buildings, while harvester units mined spice for money and returned it to base in order to finance further expansion. Substitute spice for Tiberium and you have *Command & Conquer*. Taking command of one of two rival organisations struggling for mastery of the world, you battle for control of countries, advancing or retreating according to the effectiveness of your strategy.







After each mission (most of which are essentially similar), the computer zooms in on your combat arena (in this case, the Sudan) and analyses the progress of the two combatants

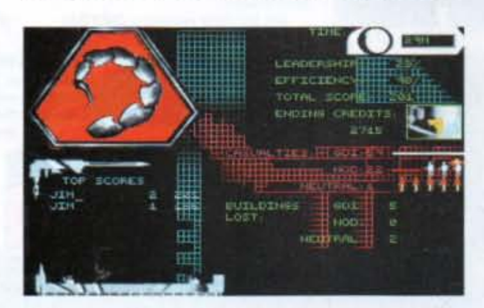


Attacking en masse is effective but can be expensive (top). The panel on the right lists your current buildings and allows you to control your resources. Buildings appear in the left-hand column and available troops in the right-hand one

Razing a village to the ground before shooting its innocent inhabitants – a great American tradition

The actual game, although derivative, is great fun to play, offering a compelling combination of speed, strategy and surprise. The number of different enemies and buildings makes it possible to pick one of many courses to success (or failure). However, it's a shame that all the battles are shown in blocky VGA – with other strategy games like *Syndicate*, *Sim City* and *Transport Tycoon* displayed in glorious SVGA, *Command & Conquer*'s chunky, predominantly brown pixels look very dated.

But arguably the most important aspect of a game like *Command & Conquer* is the artificial intelligence – of your own forces as well as the enemy's. Your foe is controlled skilfully by the computer and offers a real challenge – it's hard to win any major skirmish without amassing considerable reinforcements. But your own troops aren't always quite so intelligent in their movements. Obviously, you, the player, are the ultimate intelligence, but it's annoying when you click on a destination and move off to plan a co-ordinated offensive, returning only to find that your troops have unilaterally decided to wander off down a different valley and got themselves slaughtered. Cock-ups like these aren't particularly frequent, but they're extremely infuriating when they happen.



At the end of each mission your performance is rated. This has an effect on the whole campaign

Command & Conquer's sound is excellent, with a thumping background rock track supplemented by realtime narration. The commentary not only enhances the atmosphere but contributes greatly to mission planning. And given that you can rarely see all your units onscreen at once, it also serves to provide warnings if, for example, your prize engineers are about to be butchered.

Playing *Command & Conquer* is a highly enjoyable experience. The game has enough depth to keep you going for hours, and the multiplayer option extends its life still further. It's just unfortunate that there's nothing really new on offer here apart from a few superficial additions. A company with the kind of talent that Westwood has at its disposal should have been capable of creating an excellent new game rather than rehashing an (admittedly superb) old one. **E**

Edge rating: **Eight** out of **ten**



An engineer heads for an enemy structure. Even the early levels of *Command & Conquer* are extremely challenging – expect to get your money's worth from this one

Philosoma

Format:	PlayStation
Publisher:	SCE
Developer:	In-house
Price:	¥5800 (£45)
Release:	Out now (Jap)









The start of phase four in *Philosoma* consists of a vertically scrolling cruise high above an industrial complex. The giant girders shift around in perspective, providing an effective sensation of height

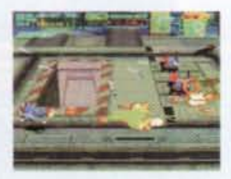


Sony has clearly lavished an inordinate amount of time on the intro sequence and links (top cluster). The first phase starts off scrolling vertically then switches to an into-the-screen view (above)

After the innovations in *Jumping Flash*, much was expected of Sony's *Philosoma*, one of the first titles to be announced for the PlayStation. In theory, the game's blend of different shoot 'em up styles seems very appealing: slick vertical and horizontal scrolling sections spiced up with side-on forced-perspective stages and 3D into- and out-of-the-screen levels. In practice, however, *Philosoma*'s pick 'n' mix approach to the genre is little more than a rather uninspired regurgitation of elements from *Axelay*, *R-Type* and other blasters.

Things don't start off too well. After an striking intro, the first level begins – a vertically scrolling asteroid belt with tumbling pebbles that are embarrassingly reminiscent of *Crescent Galaxy* on the Jaguar (although this section does show off the PlayStation's sprite-scaling abilities). Complete this level and the action switches to an into-the-screen blast through a valley. The background looks impressive but, sadly, it's only a background – although it changes perspective as you move, essentially it just scrolls along and you don't have to worry about hitting the walls.

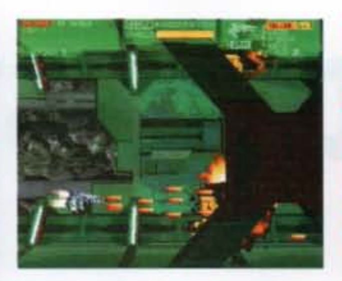
An out-of-the-screen level and a side-on scroller with a boss at the end complete phase one. The other three phases follow roughly the same format, and all the different level styles are linked together with excellent rendered video clips. Indeed, cosmetically there are many inventive flourishes in *Philosoma*, which hint at the capabilities of the PlayStation. For instance, your laser – one of four weapons available – leaves a

One of the more interesting levels is this side-on scroller that allows you to go into and out of the screen in perspective (above). However, the impression of depth isn't altogether convincing









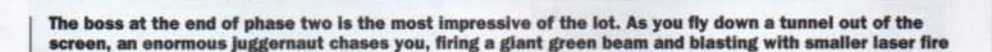






From top left: phase three begins with an attractive intro sequence which segues into the first level – a descent into a ramped tunnel dotted with platforms. Then it's a more conventional horizontal section, followed by a red-hued tunnel, which leads to a circular 'space wheel'. Next up is a vertically scrolling section with some interesting background scaling, and finally a 3D section which follows a predetermined flight path




The boss at the end of phase two is the most impressive of the lot. As you fly down a tunnel out of the screen, an enormous juggernaut chases you, firing a giant green beam and blasting with smaller laser fire

destructive transparent trail in its wake. Also memorable is the first level of phase four, which takes place high above an industrial complex looking down on giant support girders rising up from the ground.

However, despite the cleverness of many of *Philosoma*'s supplementary features, the gameplay adheres firmly to the hackneyed patterns of the genre. Fixed waves of ships attack at set points in each level, there are occasional mini-bosses to break things up, and formidable – but predictable – bosses await you at the end of each phase – to defeat them, all you need to do is avoid their barrage of fire then nip in and hit their weak spot.

Tactically, there's really not that much to do in *Philosoma*. Precious little subtlety or intelligent structure is evident in power-up placement or weapon usage, and the fast-firing Vulcan gun is sufficient for every level apart from the two out-of-the-screen ones. Basically, the game just shunts the cannon fodder onscreen and all you have to do is keep your finger jammed on the fire button while dodging enemy waves.

As a showcase for PlayStation sprite handling, *Philosoma* is a great success, with losts of variety and many neat touches. However, as a game it's a tired display of the genre's basics, with none of the imagination in terms of structure, rewards and enemy and level design that distinguishes the best shoot 'em ups.





Triggering a smart bomb to damage the disappointing boss at the end of phase four (above left). The final incarnation of the phase four boss is an embryo-like blob (above right)

Edge rating: **Five** out of **ten**

Zhadnost

Format: 3DO
Publisher: Studio 3DO
Developer: In-house
Price: £40
Release: Out now (UK)







Typical *Zhadnost* elements are a ker-azy host (top), some very US-biased multiple-choice trivia questions (middle) and sliding block puzzles with kitsch film clips



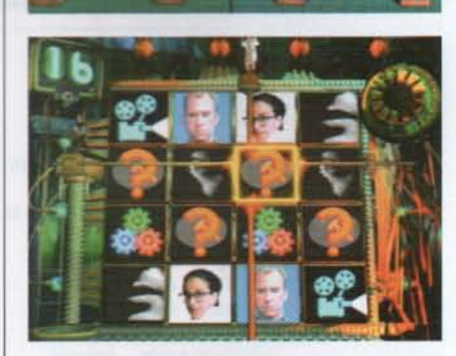
All the sub-games earn time for the 'Money-Go-Round', a particularly dire arcade puzzler

From the start, the 3DO was intended to be a family multimedia system rather than a videogames console. *Twisted*, a surreal gameshow-type affair, was just the kind of software Trip Hawkins wanted to see on the machine, complete with 'zany' challenges and surreal American 'humor' which actually wasn't all that funny. Eighteen months on, a sequel, *Zhadnost*, has arrived, and, predictably, it's in a similar vein.

Zhadnost offers more of the same sub-*Bob's Full House* challenges, the same stereotypical contestants and the same grating US 'humor'. Each challenge is played to win time in which to play the main game, the Money-Go Round, where the contestants get the chance to earn their cash.

The challenges are split up by far too many tiresome 'cinematics' – when you've seen them once you'll be frantically pressing the 'A' button to try to skip through them. And the game's US roots are all too apparent: many of the questions are about American pop culture which UK gamers will find befuddlingly obscure and not a little boring.

Zhadnost represents an attempt by 3DO to create a game with a massmarket appeal which transcends the traditional videogames audience. Unfortunately, it's essentially nothing more than a tedious board game tarted up with annoyingly over-the-top visuals. The result is a strange hybrid which falls uncomfortably between two stools, unlikely to appeal either to board game fans or videogame purists.



Sub-games are selected using this grid of icons, with all players fighting for control of the cursor

Edge rating: **Three** out of **ten**

Space Hulk

Format:	3DO
Publisher:	EA
Developer:	Games Workshop
Price:	£40
Release:	Out now





Strategy is what the latter parts of *Space Hulk* are all about. You have to control up to ten Terminators and carry out objectives like flaming rooms (above)

Space Hulk is a relatively old title given a new lease of life on the 3DO. The Amiga original was dogged by endless disk accessing and the PC game was slow and cumbersome. The 3DO version, however, has slick gameplay, an addictive strategy element and lots of rendered cut-scenes.

At first, it's all a bit like a terribly slow version of *Doom*, with teams of Terminators roaming about giant spaceships wiping out different forms of aliens. But you soon realise that all-out action is only a minor part of the game. *Space Hulk* is largely strategic: you have to take command of a group of Terminators, giving them orders, keeping those orders updated and trying to prevent yourself from getting your face ripped off. It's all extremely challenging.

The 3D environment may not be up to the standard of *Doom*, *Dark Forces* and *Duke Nukem*, but although the graphics lack speed they're wonderfully atmospheric and full of detail, with seamless transitions between the interactive sections and the rendered sequences – which kick in when, for example, an alien spaceship crashes into you.

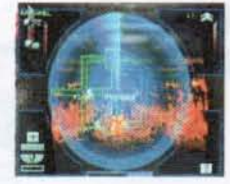


Despite its very *Doom*-like looks, *Space Hulk* has more sophisticated gameplay than *Doom* could ever offer. It looks better, too...

Translating *Space Hulk* to the 3DO has done the game a power of good. Unlike its predecessors, it's now immensely playable and extremely addictive. Unusually, there's very little hanging around waiting for the CD to catch up, and the rendered sequences – during the briefings as well as the missions themselves – set the scene perfectly.

With its seductive blend of gameplay, atmosphere and graphics, *Space Hulk* proves that the 3DO still has a lot to offer. There may not be many must-own games for the machine, but *Space Hulk* certainly belongs in that exclusive category.





This screen is where you establish your mission strategies. But you only have a limited time before you're under attack. Then it's war...







These screenshots show just how good the game can look. There's no slowdown, even with lots of Terminators and aliens onscreen at once. The 3D effects work well and the all-round atmosphere is perfect

Edge rating: **Eight** out of **ten**

Step back in time to an innocent era when platform games could still be found in arcades and the phrase 'short-term thrills' was unheard of

Rainbow Islands





Two examples of the well-themed worlds in *Rainbow Islands*: the all-black Ghost Island (above) and the first level, the bright and breezy Insect World (above right)

Formats:	Arcade, PC Engine CD (version shown), Amiga, ST, NES, C64, Spectrum
Publisher:	Taito
Players:	1-2
Released:	1988 (arcade)

The finely tuned, single-screen action of Taito's *Bubble Bobble* brought a new subtlety and depth to the platformer. On the surface, its sequel, *Rainbow Islands*, looked like a novel but unspectacular follow-up. Unlike most platformers, it scrolled vertically rather than horizontally and its characters fired rainbows instead of more menacing weapons.

But *Rainbow Islands* borrowed more than its cute graphics and lead characters from *Bubble Bobble*. The simple gameplay – which involved jumping up platforms to reach the top of the level – was enhanced by a wealth of different play tactics and a huge number of bonuses. Not only did Bub and Bob's rainbows act as weapons, but they could also be used as temporary platforms with which to scale the levels. Jumping on a rainbow made it collapse, crushing any monster underneath and releasing a power-up – a bonus goodie or one of seven coloured gems.

The gems added another layer to the gameplay: if collected in the correct order, a secret door would appear on the boss screen, leading to a bonus room. But to make the gems appear in the right order, you had to kill monsters when they were in a particular position onscreen and moving in a certain direction. Mastering the use of rainbows and gem collection was complex but rewarding and added immensely to the longterm challenge of *Rainbow Islands*.

Although a sequel, *Parasol Stars*, attempted to merge some of *Rainbow Islands*' gameplay with the single-screen dynamics of *Bubble Bobble*, the result was less than the sum of its parts (but still superior to most platformers). *Rainbow Islands*, in the arcades and in the three astoundingly good conversions for PCE, Amiga and NES, remains a benchmark for all platform games. E



Power-ups give Bub and Bob double and triple rainbows, making it much easier to take out enemies, collect power-ups and construct a 'stairway' of rainbows to ascend the level



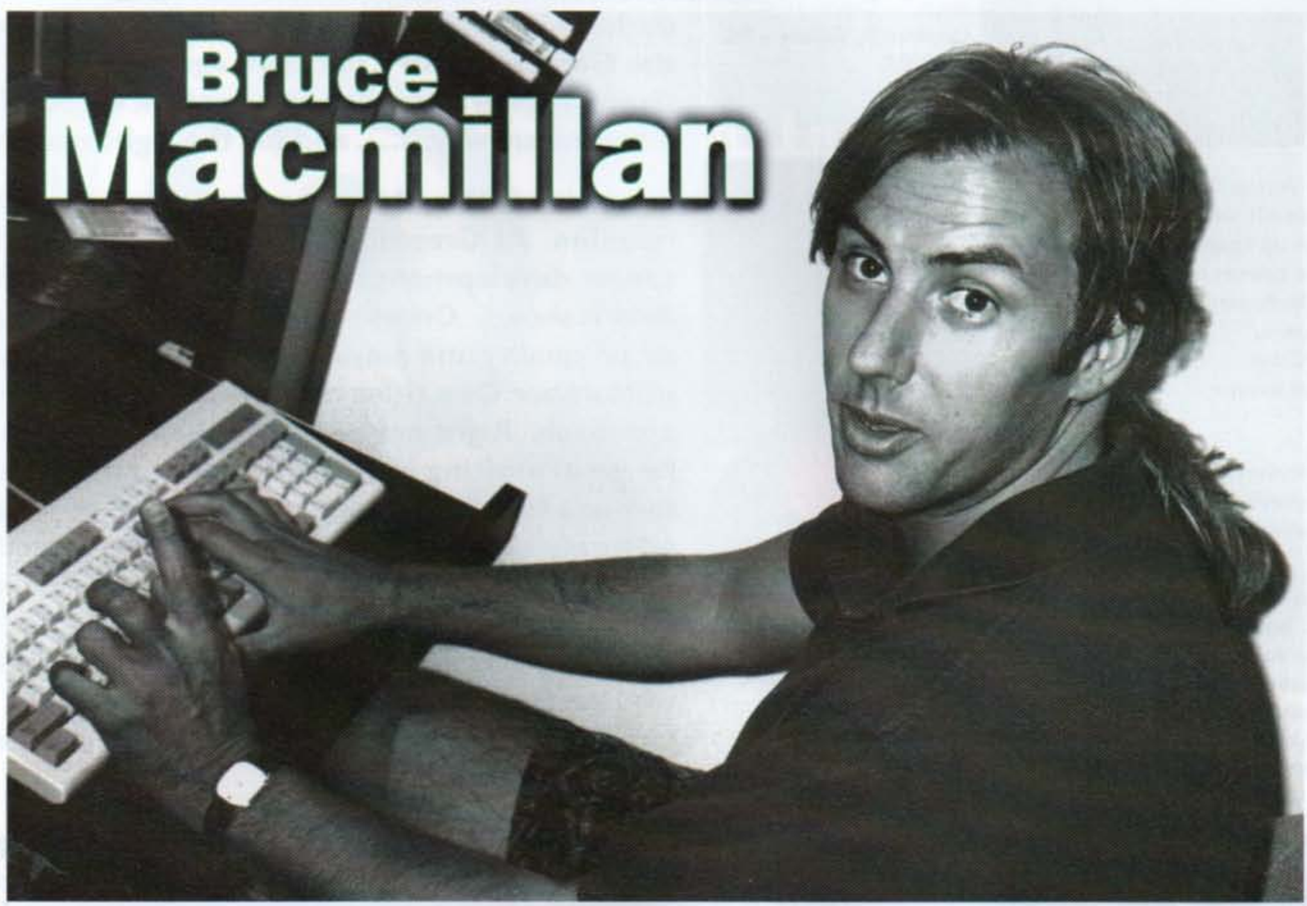
Lay a rainbow and enemy creatures use it as a platform as well



The boss at the end of the fourth level of Combat Island is a giant comedy helicopter

An audience with...

Bruce Macmillan



Few people know videogames as well as Bruce McMillan, an industry veteran who has worked with some of the biggest names in the business. **Edge** goes west to meet the man in charge of development at EA Canada (formerly Distinctive Software)

Electronic Arts Canada is a hive of activity at the moment. Bruce McMillan, senior vice president of development, is racing around, playtesting *FIFA Soccer '96*, sorting out network support, approving music, rubber-stamping artwork and spurring along the teams at Extended Play for a five-format simultaneous release of the game.

An industry old-timer, McMillan has worked with Konami, Accolade, Brøderbund, Epic, Mindscape and Sega. He's the man who conceived *Hardball 2*, designed the acclaimed (and prophetic) *4D Sports Boxing*, and brought the *FIFA* series to life. Along with Don Mattrick, he was the leading light in Distinctive Software (DSI), a Vancouver-based outfit which joined the EA fold in July 1991. A lot has changed since then. The EA organisation has swelled from 300 staff with an annual turnover of $100m to around 1500 employees and a $500m turnover. In the interim, McMillan has been responsible for some of the biggest PC releases ever.

With such impressive credentials, McMillan is a good person to talk to about the state of the games industry today. **Edge** visited EA Canada to speak to him, and although he was initially reluctant to even give an interview ('Can't you interview the team instead – I don't want to take all the credit'), he eventually conceded. A keen football player and Manchester United fan, he exudes enthusiasm for the sport he is struggling to simulate and discourses on the topic with a rare zest, always eager to get on his feet and show off a special kick. And, strangely for a North American, he always calls football football, and apologises when he slips up and calls it soccer.

Edge Did you notice any immediate changes when Electronic Arts bought out Distinctive?

Bruce McMillan No. Distinctive had a reputation as a strong design and creative house that was capable of making hit products. EA bought us with the intention of leaving us alone and allowing us to grow. DSI as a developer was always denied two things. The first was distribution access – ensuring the right and best distribution for your product. Secondly, access to capital to build your products. What we found was that many of us were spending

a lot of our time trying to get money to make things happen and not as much time as we'd like on product. What EA gave us was the ability to build our massive studio. In the short term that wouldn't have been possible with DSI. Also, the distribution power EA had was quite impressive. So we felt that complementing our skills with that business engine would create a winning team. The studio has flourished under EA's management. We've added a lot of great people and been able to take the studio onwards. Our specific studio is larger than some of the publishers out there, which is interesting. Bullfrog's the same and so's Origin. EA take a hands-off approach – they want the company to run successfully. The reason they bought the companies in the first place was that they were successful, and they didn't want to go in, turn it all around and change it.

Edge So what advice would you offer Peter Molyneux of Bullfrog, EA's most recent acquisition?

BM My advice to Peter has been to continue to focus on what he's been doing in the past, which has been very successful. He's a brilliant designer and a great visionary. It's easy to get lured into the EA engine – it's a very big company with lots of exciting things going on. What we're trying to do is focus on what we do best, let the rest of the company run on its own, and contribute as a family member rather than try and be involved with all aspects. Peter's work in the last few months is testament to the fact that that's what he's already doing. He's benefiting in the same ways we did: access to funds to build his studio up, money to recruit even better people than he has already, and access to that distribution channel. One of their objectives is to get Bullfrog more access to the North American market. They're really unknown in North America, which I think is a shame.

Edge You've really specialised in sports titles. What do you think makes a good sports game?

BM Sports games are relatively straightforward to build. It's a big X on the wall. As we're keen on saying here, 'It doesn't take a rocket scientist to get the X.' The difficult thing is making that X a bigger, better X. Take *FIFA* as an example. Before I designed that product I really thought about what the essence of football was. What excites a football crowd? It's the chants. The calibre of the match. The whole atmosphere. Those have to be reproduced somehow in a videogame. The speed of the game, too. If you go to a football match and watch a defensive struggle, it can be very boring sometimes.

'What I've tried to do with the sports games is not take them so seriously. Not have the level of detail where it's a pure simulator and gets boring'



What's really exciting is when things turn around, go back and forth. What I've tried to do with the sports products is not take them so seriously – not go down to the level of detail where it's a pure simulator and gets boring. I wanted to have strong simulation elements for authenticity, but I also wanted to have the excitement. You will see 10-0 results sometimes, if you're playing against Brazil. That's okay. It's a videogame, so you can't take it too seriously. But at the same time you have to have the authenticity. If the game is breaking a football rule, that's a problem. That is where the big X is: making the consumer feel that they're there and not playing a videogame.

Edge It's well known that you're a big *Sensible Soccer* fan…

BM Yes. *Sensi* excited me because of the speed of the gameplay. I was passing the ball around very quickly. It was the speed of the game that suspended my belief, working out how to try to get the ball up the field. I found the gameplay incredible. What I missed a lot in *Sensi* was the audio feedback on the close calls at the net. And I felt the characters themselves could be better. I felt there was a better presentation field for that product. I still play *Sensi* and think it's a great game. It's one of the games I'm always going to keep around and ensure that whichever platform I have available I will be able to play it. Generally, I keep old platforms around for great old games.

Edge Would you say that in the first incarnation of *FIFA* you missed out on the twitch gameplay that *Sensi* offers?

BM I think that's what we've learned a little bit. That twitch gameplay is essential. A lot of the 32bit games coming out right now are losing that because they're trying to get 30 and 40 frames of animation. They look really cool but lose complete control. *Sensi* taught me that visual elements aren't enough. I think I'd agree that we could have improved our gameplay, just as Sensible probably think their audiovisual elements have room for improvement. In *FIFA '95* I tried to give the product better gameplay. And in *FIFA '96* it's my number-one priority. I think we were hitting some barriers on the sound on the carts, particularly with 16bit. Where you can innovate is on the gameplay. If you're talented enough, you can make your gameplay experience fresher and newer every year. Since the last incarnation of *FIFA* we've had people spending all their waking hours working on the gameplay.

Edge So will you be incorporating fewer frames of animation in *FIFA '96*?

BM No. We profile the game and look at what's important. Run it for a while and see which animations are called most. It's a very simple technique. Those animations need to be optimised, they need to look their best. You also have to make sure they're not slowing down the gameplay. What we found was that – even if it seems pretty obvious – the dribbling, tackling, shooting and passing elements were called 80 per cent of the time, and we had to make sure those things were optimised. As for the non-interactive side of the game, like goal kicks or throw-ins, those elements are called less frequently. They still need as much detail but maybe should take less time for our animators. In the early days of *FIFA* we looked at everything. Now we're trying to focus more on the main bits. We're also getting into things like more complicated pass-backs and special moves.

Edge Special moves in a football game?

BM There's a lot of what I'd call special moves in soccer. You see a guy, break with the ball and are then able to get around a defender using a special move. A lot of the crowd will have no idea what's happened. All they'll know is that the guy got around the defender. We've tried to not get so detailed that we put in a move that nobody

Continued next page

interview

knows about. We want you to know what you're doing and be given a lot of control back. But essentially, we're trying to make the game so you can develop a strategy. If you play against me you'll maybe develop a different set of strategies than I will. I might play a long-ball game, you might play a defensive strategy and kind of work your way up the field. That's what we're trying to do with the gameplay element. Much beyond just changing the art. Our code element this year has changed more than the art elements. The art itself has got more detailed with our SGI anims. Those have got a little larger but more optimised. What we've found when we have the kind of precision an SGI machine offers is that we can reuse a lot more things.

Edge It's been said that Silicon Graphics was the worst thing that ever happened to game design. What do you feel about that?

BM SGI is a tool. It allows you to do a lot. Especially when you're programming for a cart-based system, where you're supporting, say, eight or 16 different directions of a sprite. You're doing a lot of redundant work. Once you've drawn the sprite in one direction and it looks really good, you're either going to employ an artist to draw the other directions or use a tool to do that. The SGI allows you to do that very quickly, very simply and save a lot of time. I'd rather our animators worked on the creative bits than the redundant work. The SGI also gives us the chance to prototype things. It's very simple to throw something up on an SGI, see what it looks like, play with it, see how it feels. But an SGI can't replace good game design.

My biggest concern about the industry is that we're surrounding gameplay elements with a lot of fluff. And that scares me. In the early days of this business we were forced to design games in small memory elements, so the gameplay had to be there right away. The game mechanics had to be really self-evident, because that's what people really evaluated it on. Today there's a lot of these front ends that go on and on, and so-called interactive movies at the beginning of games. These things stop you from getting to the gameplay. Five or ten minutes in, you get to the game and go, 'So this is the game. I'm not all that happy.' That's what annoys me about these tools like SGI or larger storage systems.

'My biggest concern is that we're surrounding the gameplay with a lot of fluff. That's what annoys me'

Edge You've remarked previously that all manifestations of *FIFA* are simply subsets of your ultimate game. What is this superlative football experience?

BM My ultimate game is in my mind. I haven't been able to find a platform yet that can deliver what I want. There's a lot of elements in terms of the player rendering. It's really hard work. I'm impressed with the SGI stuff, but I think we can go beyond that. Emotion, for example, is something that has yet to be captured in videogames, and yet it appears all the time in real sports. And it goes beyond sports. You go and see a great movie and you get into the characters and the story – it touches you. If you're watching a football match and you're sitting on the edge of the seat, waving your fist in the air, it's touched you emotionally somehow. Photorealistic rendering, of the stadiums, the crowd, is going to be possible very soon as resolutions go up. There's a lot of things that go on in the game that you can't really touch right now, because of memory considerations and the hardware. I'd like to look into different ways of presenting the product, with different views. With football there's the management element, the strategy element. Understanding how your coach feels about how you're playing. Being in the locker room at half-time and hearing that talk from your coach on how you can improve your play. Being coached by the computer, you coaching the computer, back and forth. Those kind of roleplaying elements haven't been touched.



Edge Does that mean we can expect a locker-room sequence in *FIFA '97*?

BM If the hardware can support it. The last thing we want to do is be running redundant videos. It really annoys me when you play a game for ten hours and then you've seen all the video elements, all the different permutations. I don't want to bring out something like that unless it can really add to the gameplay.

Edge Which format do you think will dominate in the next few months? Are you going to toe the EA line and back 3DO?

BM Formats are a really interesting situation right now. I think there are too many of them. People keep forgetting that PC CD is probably the most versatile, exciting and fastest-growing format. The technological innovation that's been going on with the PC during the last year or so has been pretty important. Active gamers are now buying the very fastest machines and turning them over very quickly. As a game producer, developer and designer, I try to focus on those high-end machines, because that's were the technological innovation is.

Edge And the consoles?

BM The winning format will be the one that delivers the most affordable hardware with the best speed, the best interactive experience and the right software. They can all win the game if they do that properly, but Sony is the only company demonstrating that they can do it. They're delivering at a competitive pricepoint which people can afford. If they continue to deliver the same standard of software, they will win this fall. I'm a big fan of *Ridge Racer*. It's an excellent product. It's a demonstration of what the PlayStation can do. For Saturn to be successful, Sega have got to be very pricepoint sensitive, focus a lot of attention on the development community and make sure there's good software coming out of the door. As for M2, if 3DO deliver the hardware spec they've promised, with an upgrade path from the original machine, then they can have a go. But it's really driven off the pricepoint, and who's going to support them? I'm betting on Sony. I think Sony's going to deliver. They want to be in this business and their start in Japan has shown that they have serious intentions to be here.

Edge So does is 3DO dead in America?

BM I wouldn't say it was dead. It's still being widely distributed in our conventional distribution area. I would say that now people are confused, because they've heard about this M2 technology and are saying, 'Should I buy an older version now when a new version is coming?' That sent a confusing message to the marketplace. Last year there was the message that this was the most state-of-the-art technology and suddenly there's new technology. I don't think that 3DO in general is dead. They still have an

opportunity if they learn from what they've done in the past and build on it. But the biggest thing for 3DO is software support.

Edge What about Nintendo's chances?

BM I think the Ultra 64 is going to be very strong in Japan, because the Japanese have had such success with the Super NES and NES. Nintendo is uniquely positioned, because it is the sole videogames-only hardware outfit. Other firms have it as a proportion of their business – even Sega has the coin-ops. Nintendo is trying to focus all its attention on the consumer business and they'll be well positioned in Japan. My biggest concern is the price of a 64bit cartridge. If you're buying a platform for $250 and then have to pay $100 for a cart, that doesn't feel right. The Neo-Geo had 100 megabit carts available for it, and they were very expensive. I know Nintendo is talking about new technology and I hope that happens. I hope the software support is also there and that Nintendo doesn't limit the amount of software by being very selective. I have no problems with the quality levels, but if they get into these exclusivity issues – 'develop for our platform and you can't release for any other things' – you're going to see a lot of key products not make it onto the Ultra 64.



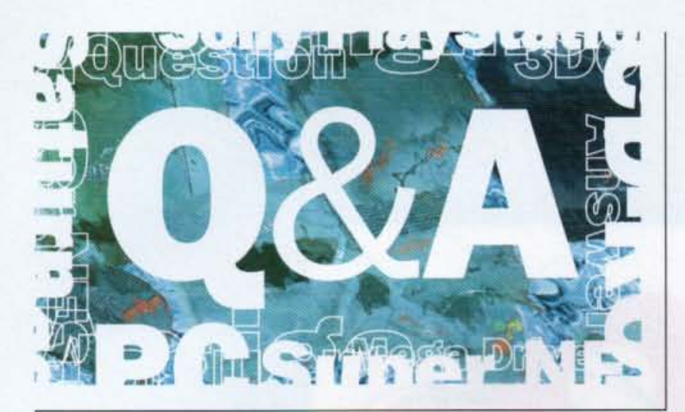
'The Ultra 64 is going to be very strong in Japan, because of the SNES and NES. I hope the software support is there and that Nintendo won't be too selective'

Edge Have you been invited to join the Nintendo 'Dream Team'?

BM I can't comment on that. But Electronic Arts has a strong relationship with Nintendo, and they've spent a lot of time with the major hardware manufacturers to make sure that we can focus on their new platforms and have an opportunity to get the products over there. So Nintendo would be foolish not to work with the bigger companies like EA, and I think they realise it themselves. Nintendo wouldn't want to release a no-name soccer game, would they?

Edge Will they bend the rules for you?

BM Several years ago 'FIFA' was just the name of the worldwide governing body of soccer. Now it's a label which represents quality and presentation. We've had very good sales on our SNES version of *FIFA* across the world, and I think Nintendo understands that *FIFA* is a very strong element that could add lots of credibility to their platform. I don't think they need to bend rules. I just think they need to get realistic on them.



Send your **questions** to Q&A, **Edge**, 30 Monmouth Street, Bath, Avon BA1 2BW

Q The PlayStation (like the Saturn and 3DO) supports a maximum screen resolution of 640x480.
1. Will PlayStation conversions of PC games such as *MYST*, *Sim City 2000* and *Magic Carpet* be in 640x480, like the PC originals?
2. Can a PAL PlayStation display 640x480 on a PAL TV without any modifications?
3. Why are so few 'next generation' titles in high res?
4. Are there any high-res titles in the pipeline?

Mark Ashurst, Ashton-in-Makerfield, Lancs

A **1. & 2.** Yes, where possible, although be prepared for slight screen flicker on some televisions.
3 & 4. Because hi-res modes use much more RAM and a lot more processing power, they are often ignored by programmers (so don't expect to see many games using this feature). *Gokujo Parodius* is one game which uses the PlayStation's and Saturn's high-resolution mode for its in-game graphics, while *Ace Combat* features hi-res 3D for its supplementary screens.



***Ace Combat* uses hi-res graphics for its supplementary screens**

Q **1.** In **Edge** 21, Acorn Systems advertised a 'new DX32 add-on for SNES and Mega Drive'. What is it and why haven't we heard of it before in **Edge**? Do they mean Sega's 32X (if so, why SNES)?
2. Also, JPF Imports advertised the new Panasonic 3DO FZ10 machine as being '30 per cent faster than the old machine and capable of running software from the US, Japan and Europe'. How?
3. Am I right in thinking that the debugging/country code protection switch on the Goldstar 3DO is only on press and development machines?
4. Is it possible, using the connector that allows you to plug SNES joypads into the 3DO, to connect Neo-Geo CD pads to a 3DO, as I have heard they are very good?

Geoff Welch, Northallerton, W Yorks

A **1.** A DX32 sounds suspiciously like a Far Eastern copying device, many of which have been available for the SNES for years. They allow games to be copied from cartridge to floppy disk, and infringe copyright in the process.
2. The company probably means that its machine is 17% faster – that's the difference between NTSC (60Hz) and PAL (50Hz).
3. Yes.
4. Not with the same connector, but a specific Neo-Geo adaptor could well be available in Japan.

Q **1.** Will there be another Saturn conversion of *Daytona*, using AM2's new operating system?
2. I have heard that Sony has signed up exclusive rights to Namco's *Ridge Racer* and other games. Does this mean that it will prevent a Saturn release?
3. Because there is a 3DO board for the PC, will there be a Saturn or a PlayStation board as well?
4. What does 'realtime' mean?
5. Will the cart slot at the back of the Saturn be used for extra graphics cards (so the number of polygons can be increased) or extra memory cards?

Steven Malcolm, Rickmansworth

A **1.** No, but there are plans to release *Sega Rally* on the Saturn – it's one game that will undoubtedly benefit from Sega's efforts to improve the Saturn's 3D.
2. Possibly, although there's still a chance of *Ridge Racer* appearing on the Saturn. But Namco will make that decision, not Sony.
3. Sega is rumoured to be talking to a company about getting Saturn games running on the PC. It would certainly be foolish not to take advantage of this vast market. Sony's development path for the PlayStation embraces the PC market with open arms, so a PC card seems logical.
4. 'Realtime' refers to graphics that are actually calculated while the game is running, as opposed to pre-rendered visuals which are simply played back using stored data (usually directly from CD-ROM in video form). The advantage of realtime graphics is that the player's actions determine what the computer displays onscreen, whereas pre-rendered graphics are completely pre-determined.

Q **1.** As the Playstation is less expensive in Japan than the Saturn (and is also expected to be cheaper in the US), will the UK Playstation be less expensive than the Saturn at £399?
2. How does the PlayStation's graphics performance compare to the 486DX2, Pentium and PowerPC processors?
3. Which current PC games will be arriving on the Playstation?
4. With rumours that Sony is developing a 64bit machine, is there likely to be an upgrade path from the existing PlayStation, as with M2?
5. What title (if any) is likely to be bundled with the UK Playstation? Rumour has it that *MK3* is a possibility, but I would prefer *Tekken*. I hope there will be some sort of choice. (The Japanese method of selling standalone units is actually better for this reason.)
6. Assuming it's not bundled, is it worth getting *Ridge Racer* now or waiting for *Ridge Racer 2*? I am unlikely to be in a position to use the head-to-head link-up.

David Sandison

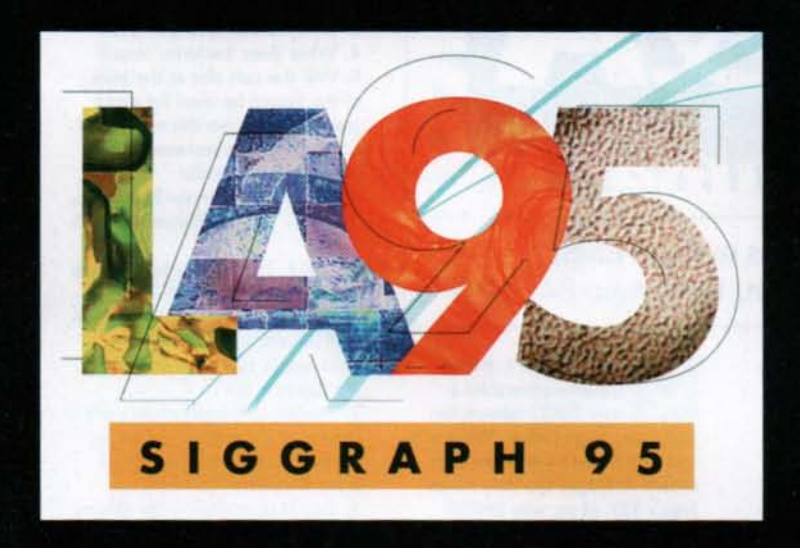
A **1.** As announced in **Edge** last month, Sony is planning to price the PlayStation at £299.
2. The PlayStation's 2D and 3D performance is far superior to a PC's. Even a 90MHz Pentium PC can't handle the sheer amount of geometry as the PlayStation can, simply because it lacks a dedicated polygon processor. Anyone who needs convincing should compare *FX Fighter* (supposedly the state of the art in PC fighting games) with *Tekken*. The differences are even more pronounced with 2D graphics, as once again Sony's console includes custom hardware for handling sprites, scrolling, and effects such as rotation and scaling.
3. There are many PC games making their way to the console, including the likes of Magic *Carpet*, *Fade To Black* (formerly *Crossfire*) and *Actua Soccer*.
4. Sony will probably adopt the same strategy as Nintendo and release a brand-new machine in a few years' time.
5. & 6. It seems that the machine will not be bundled with a game but will include a demo CD instead. *Ridge Racer* is still worthy of consideration – the sequel might not arrive until late 1995 or early 1996.

Q and A

You can depend on Edge to cut through the technobabble and give you straight answers. You can write to us at Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, fax us on 01225 338236, or e-mail us at edge@futurenet.co.uk.

Edge regrets that it can't answer questions personally, by phone, post or e-mail.

next month



Next month **Edge** will be attending the world's largest computer graphics event, Siggraph. This year's show takes place in Los Angeles and will feature, together with a wealth of other digital disciplines, the latest advances in realtime image generation and computer graphics software. Although primarily an event for electronic artists, Siggraph is also an important showcase for new interactive entertainment technology. See **Edge** 26 for an extensive report.

Issue twenty-six

Thursday 28 September


EDGE


Future
PUBLISHING
Your guarantee of value
9 771350 159014
10
October 1995 £3.50